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ABSTRACT

Group classes with 30-40 children per teacher favor the children who catch on fast. These children participate more in class and give more feedback to the teacher, so the teacher gears instruction to them and goes too fast for students who are having difficulty. Peer and cross-age tutoring, can supplement class learning and help the below-average student catch up. Tutors provide tutees with a greater chance for personal participation in instruction and offer reinforcement of correct responses. The tutors are likely to improve their own knowledge of the subject and their attitude toward school as well. Individualized instruction kits and materials are now available on the market and are useful for tutoring programs. Support of teachers for the tutoring program is crucial, as some teachers feel threatened by any program which removes partial responsibility for teaching from them and unconsciously subvert tutoring program. Peer tutoring has an advantage over cross-age or adult tutoring in that it does not require interclassroom cooperation. (A discussion of how to decide if tutoring is warranted in a classroom and how to organize and supervise a tutoring program is included in this book. An annotated bibliography provides reports of effects of tutoring on tutor and tutee.) (CD)

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peer and cross-age tutoring in the schools

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PEER AND CROSS-AGE TUTORING IN THE SCHOOLS:

AN INDIVIDUALIZED SUPPLEMENT TO GROUP INSTRUCTION

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I

CONCEPTS INVOLVED IN TUTORING

A. INTRODUCTION

Should peer and cross-age tutoring become an integral part of the classroom organization in our schools? Is it or should it become an essential adjunct to the present classroom of one teacher and 30 to 40 youngsters? And, is it a process that can bring *only* improvement as its proponents have claimed? These are questions teachers and administrators are asking as they learn about thousands of tutoring programs in operation, as they weigh the decision of initiating one themselves, or as they attempt to evaluate and improve their own ongoing tutoring program.

In training tutors in inner-city schools, in observing them in action, and in interviewing the tutors and tutees after the completion of the tutoring, my main concern has been to determine the conditions conducive to positive outcomes for both the tutor and tutee. From observations, as well as from a careful review of the available literature, there is clear evidence that the effects of the tutor and tutee are positive when the tutoring process has been carefully developed and appropriately used. There have been negative effects when it has not.

But is tutoring needed only for the child who is having great difficulty in learning? While tutoring programs have been provided for by government support for the children of the poor—should tutoring be limited to only these children? What creates the need for tutoring and who needs it?

I have been observing and consulting with a large number of elementary school teachers in the inner-city schools of Chicago. When I question each teacher about the children who aren't making it, the teachers have no difficulty in identifying such children. When I ask whether these children could make it under more favorable conditions, each teacher is certain that the children do have the potential to succeed in school *if* given the proper help. What is it then that is necessary for these children to reach their potential for improved learning in the school? Teachers respond that if they had the time and energy to devote to these children individually, each of these children would succeed in school.

1. Group Instruction vs. Individualized Help

It appears to me that the learning problems of many children in the school arise from the fact that each teacher is expected to teach 30 or more children simultaneously. This group teaching-learning process favors some children at the expense of other children in the same classroom.

Time and the number of children in the class do not permit the teacher to interact with each child on a one-to-one basis except in special study or work periods. Teachers are forced by circumstances to put most of their time and effort into group teaching. In this group teaching process teachers tend to give most attention to the youngsters who are most alert and responsive to their teaching. They tend to be guided by the ones who speak up and especially by the children who can answer

questions quickly and correctly. Using these children as guides and as a source of feedback about the learning that is taking place in the class, teachers proceed with the classroom presentations, recitations, and discussions at a challenging pace. In depending upon the most responsive children for guidance in the group teaching process, the teacher receives *deceptive* feedback about the understanding and learning of the other students in the classroom.

Most of the learning difficulties that children suffer from in the group learning situation stem from this lack of appropriate feedback to the teacher about their learning needs. In addition, there is not enough time for the teacher to provide the special help individual children may need when they need it. Even the most conscientious teacher who is eager to help each child suffers pangs of guilt over any extended time spent on a single child at the expense of the larger group.

Even when group instruction is very good and effective in terms of the learning of the majority of the children in the group, *some* children will still need special individualized help. And, no matter how gifted and motivated they are, *all* children will need help at particular times. Group instruction per se cannot provide for the individual learning problems of children when and where they need special help. If the class is very small, the teacher may be able to provide both group instruction and followup with the help each child needs at different stages in the process. When classes are large, teachers are caught in a situation over which they have little or no control. There are not enough minutes in the day to provide for group instruction as well as the individual followup some of the children need.

Where little help is available in the class for their special learning needs, some children are able to get the individualized help they need from adults or siblings in the home. This type of help is available more frequently in some homes than it is in others (Dave, 1963).

It has been noted that in some highly selective private schools, especially in university communities, the parents tend to spend many hours with their children helping them with their learning difficulties when and where they are evident. However, there are many homes where individual help for the child's learning problems is only rarely available.

The position of this paper is that group instruction, even under ideal conditions, must be supplemented by individualized help if *all* the children in the class are to learn well. Tutoring, when used well, is a useful supplement to group instruction inasmuch as it can provide much of the individualized help that many of the children need at particular times and stages in the learning process. While there may be other sources for the individualized help, tutoring can be provided in the schools in such a way that all the children may be assured of the help they need at the time they need it.

It is important that teachers recognize that most children need individualized help at various times as a *supplement* to the group instruction. Under good group instruction it is likely that only a realtively small amount of individualized help will be necessary to insure that most of the children attain mastery of the content and objectives of instruction. A systematic program of tutoring would enable almost all of the children in each class to attain an adequate level of learning—if the teachers recognize the need for individual help and are willing to provide it themselves or are supportive of tutoring efforts in the home or in the school.

2. Some Background

Throughout recorded history there have been references to tutoring. At some periods in history tutoring was the main avenue to learning. The elite and wealthy have always made some use of private tutors. Even more common has been

the use of older children to help younger children learn. Probably the most renowned spokesman for tutoring was the 17th century Moravian educator Comenius. He characterized the schools of his time as "slaughterhouses of the mind" and "places where minds are fed on words." In order to overcome these deplorable conditions he suggested the use of tutoring for children to learn from each other.

> *The saying, 'He who teaches others, teaches himself', is very true, not only because constant repetition impresses a fact indelibly on the mind, but because the process of teaching in itself gives deeper insight into the subject taught . . . The gifted Joachim Fortius used to say that . . . if a student wished to make progress, he should arrange to give lessons daily in the subjects which he was studying, even if he had to hire his pupils* [*Keatinge, 1967, p. 156*].

In England at the end of the 18th century, Joseph Lancaster developed a very popular and inexpensive form of mass education for the poor. He, as the master teacher, trained a cadre of students to be his assistant teachers. He taught the lesson to his assistant teachers. Then, under Lancaster's supervision, each taught the same lesson to about a score of pupils. This system, which was very popular in England, was introduced by Lancaster in the United States in 1818 where it was widely used for about three decades. His system did reduce costs, but it aroused parents about the second class education their children were receiving.

Dr. Andrew Bell in Madras, India, and Lancaster share the credit for originating and promoting the "monitorial system" which they did with indefatigable zeal. At the same time, in Boston, William Fowle spelled out in meticulous detail in his "Manual of Mutual Instruction" procedures, materials, and even a reward system of monetary prizes to be used in both small and large schools. Fowle justified the wide use of the mutual instruction system (monitorial) by:

> *. . . experience has discovered in it* [*mutual instruction*] *a far greater benefit, which is the more thorough and practical education acquired by those children who are required to* ***teach*** *as well as* ***learn*** *and in a well ordered school on the monitorial plan* every ***child*** *before he leaves school on the monitorial plan is employed as a teacher* [*Russell, 1826, p. 4*].

In the United States frontier, the little red school was the only form of instruction available in proximity to the farms and village homes. Because the children were all at such different educational levels and ages, teachers found that they couldn't do the entire teaching job alone. The teacher designated the older student as tutors to help the younger children. It should be noted that many one-room schoolhouses had fewer children than the single classrooms in the schools today.

Tutoring was abandoned as teachers became a professional group with special training in normal schools and colleges. Also, the age grading of children in the classrooms highlighted the similarity of the children, and teachers came to think of themselves as professionals with unique training and skills for teaching a particular age group or subject. During the period 1900-1960 there was little mention of tutoring in the public schools and little or no research on tutoring.

In the early 1960's a revival of peer and cross-age tutoring began. Some of the early programs which received great prominence were the Youth Homework Helper program in New York (Deering, 1966) and a cross-age program of tutoring in Ann Arbor, Michigan (Lippitt and Lohman, 1965). The tutoring programs spread throughout the country with an almost bandwagon effect. By 1970, there were more than 10,000 programs involving the use of tutoring in the United States (Melaragno, 1974). One symptom of this great interest is the fact that in a single year (1972-73), the author found that more than 70 Ph.D. dissertations were completed on the subject of tutoring in the schools. Major reviews on tutoring have been written by

Dillner (1971), Gartner et al. (1971), McClellan (1971), Rosenshine and Furst (1969), and Thelen (1968).

The great interest in and burgeoning development of tutoring can in part be traced to the fact that many schools (and teachers) were faced with learning situations very different from those they had experienced a few years earlier. The great mobility of the population changed the nature of the students in many classrooms and many of these children had difficulty in learning with the materials and techniques teachers had used previously with some success. With new student populations and low achievement levels came a great need for new instructional methods: new materials, new support, new resources. The decreasing performance of children in the inner-city schools led to public alarm about the depressed quality of education. Volunteer tutoring, and then paid tutoring and aide programs, came into being as a means of helping children to learn.

A second factor responsible for increased interest in tutoring was the recognition of the importance of education in modern society and a sense of desperation about the need to help each child gain a good education. New materials, programmed instruction, computer-assisted instruction, and many other special programs were developed and tried with great fervor and high expectation. Only rarely have they proven to be successful in raising the level of learning of the pupils. Tutoring, on the other hand, has worked well enough to be embraced by many as the panacea.

Some tutoring programs were built on the assumption that all that was necessary was to bring the tutor and tutee together, thus unleashing the creativity of the tutor who, calling on years of experience as a student, would intuitively know how to tutor and how to develop a workable, positive, helping relation with the tutee. Fortunately, not all tutoring programs were built on these assumptions.

Research has demonstrated once again that panaceas are too simplistic. In reviewing the research and in working with tutors, tutees, and classroom teachers, we have found that under some conditions tutoring works beautifully, and under some conditions it works very badly. We need to understand the conditions under which tutoring will provide the help that children need.

3. Limits of This Paper

The emphasis in this paper will be on children helping children through peer and cross-age tutoring. It will deal primarily with the areas of reading and related language arts. It differentiates between teaching and tutoring with tutoring defined as one person, having a minimum of special training, helping one or more students learn a specific task, under the guidance of a teacher or supervisor.

The paper will emphasize the use of tutoring as one method of providing individualized help to supplement group instructional methods. We will use a model of the principles of learning to clarify essential elements in both individual and group learning situations. The model will also serve as a basis for determining the unique role of tutoring for helping individual children. We will refer to this model in analyzing the research literature on tutoring and to account for some of the findings.

The paper will deal with the published research reports in terms of the four essential parts of every tutoring situation: the tutor, the tutee, the learning materials, and support system.

Even at this stage, we can state that while tutoring is not a panacea, it is a useful and very effective supplement to group instruction. Tutoring is an indispensable and effective resource for the teacher, tutor, and tutee when certain conditions are met:

a. There is a structured situation in terms of a clearly specified task, time, material, and procedures.

b. There is a supportive teacher or supervisor—the tutor as well as the tutee needs sustained and continuous direction and encouragement.
c. The tutors and tutees support and reinforce each other.
d. While tutors do not need elaborate training, they do need clear directions and a model of appropriate behaviors.
e. Both tutors and tutees need feedback and correction and both need clearly perceived learning gains.

The last part of the paper will be concerned with recommendations for future research in the light of personal observations and the research literature.

B. LEARNING PRINCIPLES AND PROCESS IN GROUP AND INDIVIDUALIZED INSTRUCTION

Both group instruction and individualized instruction are subject to the principles of learning. When instruction, either group or individualized, is working well, it explicitly or implicitly uses these principles most effectively. When instruction (and learning) is working badly, the breakdown is the result of the violation or ineffective use of one or more principles of learning. There are many learning theories and generalizations about learning. It is necessary to select a set of internally consistent and interrelated principles and determine how they may be used to explain and account for the learning that takes place.

During the past decade, teachers with whom I have been working in the inner-city schools have made excellent use of a set of principles of learning adapted from the writing of Dollard and Miller (1950). These principles served as a simple and effective framework for observing and analyzing classroom processes, for selecting and altering instructional materials, and for dealing with the learning problems of individual students in the classroom group. We have used it to account for effective instruction and learning as well as to explain and alter ineffective instruction and poor learning. We have also found it indispensable in observing and selecting new programs, in analyzing the research literature, and in determining what new inservice teacher training programs needed (Bloom, 1966).

There are three basic concepts or principles in this framework which are essential in every learning situation in or out of school. These three principles include cues, participation, and reinforcement. The model was found to be especially applicable to inner-city students because Dollard and Miller have emphasized the effect of the child's cultural background on which cues are meaningful, the type and amount of participation needed, and which reinforcements are valued and effective. The Dollard and Miller learning principles are based on a synthesis of a cultural-anthropological approach with the two more traditional approaches to learning: the behavioristic view, concerned with stimulus-response; and the psychoanalytic view concerned with affect and ego development.

In this section of the paper I will attempt to explain and illustrate the use of these principles in group instruction as well as in the individualized instruction provided by tutoring. The differences in use of these principles in group and individualized learning situations help us understand why the latter is necessary to supplement the former.

1. Cues

In learning, the cues are the stimuli which convey to students what they are to do and how they are to do it. They include explanations and instructions about ideas, skills, procedures, and relationships which students are to learn. Although the cues

are most frequently verbal, they may also be in other forms, such as mathematical, visual or graphic, manipulative, demonstrations, and models. The cues may vary in meaningfulness to the learner and they may differ in strength or salience as well as in individual and cultural relevance. Cues may be found in instruction as well as in the material used for instruction. Much of the research on instruction and on curriculum and material development has to do with the search for the most effective cues for particular groups of learners.

a. Cues in Group Instruction. Teachers, in selecting instructional material, attempt to find material in which the cues—explanations, language used, and organization of ideas and procedures—are likely to be meaningful and relevant to the group of students in their classes. Teachers attempt to tailor their own language, explanations, and directions to suit the classroom group(s) for which they are responsible. Dahloff (1971) has demonstrated that teachers typically have particular students in mind when selecting materials and planning the instruction. In the classroom, a few students provide them with feedback as to when the cues are appropriate and understood and when they are confusing and meaningless to the group. In any classroom group it is rare that the cues are equally meaningful to all the students. Cues that are clear for some students may be misunderstood by others in the group.

Teachers use a variety of strategies to make the cues more meaningful. They repeat the cues to give the children several opportunities to hear and see the cues, if they have missed them the first time. They break the instruction into smaller steps, make the cues more concrete when the students have difficulty with more abstract cues, and use graphic, or audio-visual cues, or models of responses when verbal cues are inadequate.

Teachers use the behaviors of the children and their questions and answers to determine whether the cues are meaningful and effective. The attentiveness of the students is a useful index for the teachers to determine the clarity, meaningfulness, and attractiveness of the cues. The questions asked by students, and the answers students give orally or in written form to teachers' questions, represent the most frequent methods used to check on the cues. Where they can, teachers correct or alter the cues when there is clear evidence that many students have not adequately understood them. But teachers usually cannot correct or alter the cues for *each* student who is having difficulty with them. The teacher depends heavily on written and other materials for this purpose and supplements with additional instruction whenever time and the other constraints in the classroom situation permit.

b. Cues in Individualized Instruction. The teacher or tutor attempts to select instructional or learning material best suited to the individual student in terms of the cues used. Where possible one should select the tutor who uses the language and explanations best suited to the individual student. Where the child comes from a particular cultural background, the tutor attuned to that cultural milieu can use the verbal and nonverbal cues and language qualities most easily understood by the tutee.

In individualized instruction there is an opportunity for a great deal of communication and interaction between individual learners and the tutors. The tutors supply additional and altered cues as they recognize where the tutees are having problems with the cues in the material or in the instruction. The tutors are constantly clarifying the cues in terms of the responses made by the tutees. Where the tutors have learned the material recently, they are able to remember the features that gave them trouble, and they attempt to supply cues to help the tutees overcome these same difficulties.

On a one-to-one basis, the tutor contrasts each error with the correct response and attempts to help the tutee discover the differences and the source of error. They are also able to repeat and alter the cues as many times as is necessary to make them clear and understandable to the individual tutee. Tutors are responsive to the attentiveness of the tutees and they find ways of reducing the anxiety level of the tutees so that they can attend to the cues. It is also likely that the absence of other children provides a situation with fewer distractions so that the cues can become more salient.

But the main point to be made about the individualized learning situation is that the original cues and the altered cues are intended to be those which are clearest and most meaningful to the individual learner. The interaction between tutor and tutee is ideally such that the cues and their alterations are constantly being fitted to the needs of the individual learner. While we have analyzed this situation in terms of cues, meaningfulness, cultural background, etc., we should emphasize that when tutor and tutee are interacting well, the entire process of cues and responses takes place simply, rapidly, and naturally; that is, without reference to the language of learning theory that we are using here for analytic purposes.

2. Participation

The learner's response to the stimulus or cue is referred to as participation. No learning takes place unless the child *actively* responds. Learners may participate by rehearsing or repeating an idea, by relating the cue to previous experiences and knowledge, and by applying the idea to new situations or problems they pose for themselves. In general, they make efforts to store, organize, relate, or use the new knowledge, concepts, procedures, and skills. The participation may be in thought (covert) or in observable (overt) form such as actions, questions, statements, written responses, and other forms of communication to others.

a. Participation in Group Instruction. The most common methods of securing maximum participation in group instruction are to secure written responses of the students or to secure oral responses from the students in choral form. Both methods may be effective if there is any way for the teacher to correct the individual written or oral responses and to reinforce those which are correct and appropriate.

As we mentioned in the introductory section, teachers attempt to secure feedback on the learning of the class by securing responses from a few selected children. While this method does insure that these children are participating, it does little to stimulate participation on the part of the other students in the class. Under some conditions this selective participation of a few students may serve to reduce even the covert participation of other students in the class.

Research has shown that in the typical class, the teacher does 70 percent or more of the talking (Flanders, 1965). The most common shortcoming in group instruction is the lack of sufficient opportunity for the majority of children to respond in an overt and observable way. While students may be responding in thought (covertly), teachers can not be certain they are participating, and they cannot correct erroneous responses. Finally, they cannot effectively reinforce accurate and appropriate covert responses.

Perhaps the greatest source of difficulty in group instruction is the lack of time for the teacher to insure full active participation of all children in the learning. Too much of the participation in group instruction must be in thought and therefore nonobservable.

b. Participation in Individual Instruction. Children need differential amounts of practice in order to learn well. In the individualized instruction situation, tutors can encourage and give much opportunity for tutees to respond overtly. They can correct the responses quickly and can reinforce the appropriate responses. The tutors get so much feedback from the individual learners that they can judge the amount of practice each individual needs to learn it well. Immediate feedback and correction guards against the learner practicing erroneous responses which become cumulative and compounded with other errors in learning. If the tutor doesn't dominate the tutoring situation by lecturing to the tutee, the great strength of the tutoring situation is the rich opportunity for the learner to participate in the learning in an overt and observable way.

3. Reinforcement

Any reward, whether external or internal, that strengthens the tendency for a response to be repeated is called reinforcement. Mere repetition of a response (without reinforcement) does not strengthen a habit. Drill in the absence of reinforcement may destroy learning. A key problem in all learning is the provision of reinforcement of accurate and appropriate responses and the prevention of reinforcement of inaccurate and inappropriate responses.

Reward or reinforcement may be provided by the teacher or other adults. It may also be provided by the peer group, and it may even by provided by individuals for themselves. Under some good conditions of learning, reward is intrinsic to the learning itself and it provides feelings of adequacy and accuracy as the individual makes the appropriate responses.

One problem for school learning is that different subcultures use different kinds of reinforcements. What is reinforcement in one subculture may be neutral or even punishment in another (Havighurst, 1970).

a. Reinforcement in Group Instruction. The teacher in group instruction must understand the kinds of reinforcement which serve as rewards for different children in the same classroom. The teacher attempts to use a variety of types of reinforcement, including verbal praise, physical and gestural reinforcements, social rewards, attention given to a learner, and various forms of recognition including tokens, stars, etc.

In group instruction, it is difficult for the teacher to provide reinforcement for each child timed in relation to correct or appropriate responses. All too frequently, a small number of children in the classroom are given the majority of reinforcements, while many other children are rarely rewarded for their responses (Good and Brophy, 1973). The children who are rewarded by praise and special recognition tend to be the most responsive children in the group and they gradually come to dominate the time of the entire classroom group as they seek further rewards from the teacher and the other students in the class.

The other difficulty in group instruction is that only rarely can the reinforcements be clearly related to the responses of individual children. The teacher in giving group praise and general rewards to the entire group does not provide specific reinforcement when individual children most need it to strengthen their own learning.

b. Reinforcement in Individual Instruction. In the individualized learning situation, the tutee receives the undivided attention of another person—a most powerful reinforcement for the active participation of the learner. Because the tutoring situation is so private, it lowers the tutee's internal anxiety (a very strong

reinforcement). It removes the danger of looking ridiculous in front of a group of peers, thus freeing the tutee to participate fully and to make errors as well as correct responses. If tutors are sensitive to tutees, they reinforce the correct responses and get the learner to change the error responses to correct ones, which in turn are reinforced.

The great advantages of the individualized situation are that tutors quickly learn the kinds of reinforcements effective for individual learners, they can provide a variety of effective reinforcements well-timed in relation to the learner's responses, and tutors can continually monitor learning responses in order to insure that the majority of responses are accurate and appropriate. All of these methods insure the success of learners and the reinforcement of the successful learning responses.

C. TUTORS

In this section we will emphasize the role of tutors in the tutoring process. Although we will concentrate on what we believe to be the main purpose of tutoring—helping tutees in the learning process—we will also deal with possible benefits to tutors. This aspect of the process is especially important when the tutors themselves are also in need of help and support in the learning process.

In the introduction we stated a number of generalizations about successful tutoring and the effective tutoring process. The three generalizations we will deal with in this section of the paper are:

1. Tutors must be carefully selected for their ability to interact with the particular tutees as well as for their knowledge and experience with the subject matter to be taught.
2. Tutors must be provided with at least minimal training to insure that they carry on the process with maximum effectiveness.
3. Tutors must be supervised and supported in order to insure that the basic conditions for the tutoring process are met over time.

1. Who Can Tutor?

The consensus appears to be that a wide range of ages, experience, levels of achievement, cultural backgrounds, and intelligence levels may characterize successful tutors. Perhaps the minimum requisites are that tutors must have some familiarity or prior experience with the subject matter to be learned, that they must be capable of assuming responsibility for helping another person, and finally that they must make the learning success of their tutees the central concern in their relationship.

The background of tutors appears to be of relatively little consequence in determining their ability to help their tutees. Tutees of low achieving tutors learned as effectively as did those of high achieving tutors (Hassinger, 1969; Cloward, 1967; Rosner, 1970; Gartner, 1972; Paoni, 1971). Several studies compared the effectiveness of young tutors with that of college students and adults. Thomas (1970) found that young tutors (peers of or slightly older than their tutees) were superior to college students as tutors. However, his study demonstrated that the college students were superior where their greater experience could be used, e.g. in vocabulary development. Perhaps the wide range of possible tutors is dependent on the specificity of the tutoring task. If tutoring is limited to a particular skill and a specific tutoring task, underachieving students can succeed as well as or sometimes better than adult or college students (Ellson, 1968; Thomas, 1970). Ellson (1968) went so far as to demonstrate that mental retardates could use a programed tutoring system for first

graders with considerable success. What the research suggests is that older and more experienced persons have difficulty in following a narrowly set tutoring process and attempt to bring more of their own background and training into the tutoring process.

Some programs of tutoring have concluded that 2-3 year age differential between tutor and tutee may be most beneficial. Both Cloward (1967) and Lippitt (1969) report that a 3-year (or two-grade level) differential works best, while Rosner (1970) found that a 2-year differential in both age and achievement level (grade equivalent) was optimal for achievement gains on the part of the tutees. Rosner (1970) also reports that this differential lessens resentment and personality clashes between tutor and tutee. Bank Street College (1973) also suggests a 2-year differential, but claims that the important point is that both children must be emotionally equipped to share a learning activity.

Some theorists have thought of university students in teacher education as ideal tutors because of their professional interest in the problems of learning. Lansdown (1952), Shaver (1969), and Klosterman (1968) have found that there are significant improvements in the learning of tutees working with teacher education students. In addition, teacher education students gained a more realistic view of teaching and of the requirements of being a successful teacher. However, it has been noted that few teacher education student tutors returned to teach in the inner city. They sought and found teaching positions far removed from their experiences as tutors in inner-city schools.

Other studies have compared college students and women in the community as volunteer tutors. Chatterjee (1967) concluded that college students were less reliable and dependable than women in the community. The college group was transient and, though well-intentioned, found that helping inner-city children was complex, overwhelming, and in conflict with their personal needs. Rich (1966) pointed out that college student volunteers were more effective as companions for younger children and youths but adults were more effective in improving the learning of their tutees.

There have been several studies of paraprofessionals—parents or persons in the community who received training and pay for tutoring. In general (McCleary, 1971; Shaver, 1969) paraprofessionals have proved very effective in structured tutoring situations when they have received adequate training and supervision. Supervision is especially necessary at an early stage in the process to reassure the new tutors and to check against gross misunderstandings and misinterpretations of the tutoring process.

While it is evident that a considerable spectrum of persons can contribute as tutors to the learning of others, each type of tutor has special problems. All tutors appear to lose enthusiasm for the tutoring process if there is little or no evidence of inprovement in their tutees' learning. We will return to this problem in the support system section, but we may emphasize here that there should be some means of making the learning gains of the tutees visible to both tutors and tutees if they are to be motivated to participate further in the tutoring process.

Different groups of tutors vary in reliability and dependability to continue with the tutoring process. College student volunteers are probably the least dependable, while paid paraprofessionals are probably most dependable. Peer and slightly older tutors in the schools are very dependable if tutoring is made a part of their schoolwork. It is likely that this dependability decreases if they are tutoring on a completely volunteer basis outside of school hours.

College student tutors' most frequent problem is to maintain a clear role definition with their tutees. When college tutors changed from subject-centered relations with their tutees to more game and personalized relations, the tutees had

difficulty in switching back from a feeling of buddy-buddy to the discipline of working. It was hard to return to academic tasks after playing softball with the tutor.

The peer and cross-age tutors' most frequent problems were their unrealistic expectations of the learners' abilities and their tendency to do the work for the learners when they became frustrated. Some tutors also had a tendency to be impatient or overly strict.

2. Training of Tutors

A common early view of the tutoring process was that it would bring two persons together and that their relationship and the tutor's prior experience would automatically lead to learning gains as well as to gains in self-image and good human relations for at least the tutee, and in many cases for the tutor as well. Von Harrison and Brimley (1971) and Niedermeyer (1971) have pointed out that it is not quite so automatic as the early views anticipated. Von Harrison and Brimley note, "The area that obviously needs guidance and input is the development of tutoring skills for significant academic progress." When tutoring works well for academic learning progress, the "human-type benefits occur *almost automatically* with or without emphasis on this aspect in the training phases of the program."

In my own work in training tutors for peer tutoring at the elementary school level, I have found that the tutors need:

a. Clear directions as to what they are to do and how to do it.
b. A specific learning task and specific instructional materials for that task.
c. A model of appropriate tutoring behaviors for the task.
d. An opportunity to role play or practice with feedback and correction and, possibly, a second opportunity to review the model and practice further.
e. Some opportunity to make a choice of materials or games and even the possibility of creating or reinterpreting learning materials.

To meet these conditions, where the student tutor has already learned the content to be taught, only a short training period is necessary.

Bank Street College (1973) emphasizes that supervisors act as models for tutors to follow in their own tutoring. In some cases tutors observe supervisors tutoring students as a basis for their own tutoring.

Quite a contrast with these less structured tutor training programs is the Ellson program (1969) in which each detail of the tutoring is programed and tutors are expected to follow each detail as carefully as possible. This program requires hours of training and reports on the results are quite good in terms of the tutees' learning gains.

There is little research in which tutor training systems have been carefully compared. Von Harrison (1971) showed that fifth grade tutors are significantly more effective after a brief training program on task-specific procedures. His program involved learning nine tutoring skills and the steps to follow for each of them. The tutors study the tutor's manual at home and then role play these skills and steps under observation of a supervisor. The tutors also check themselves with specific study questions. Von Harrison found that children helped by tutors with these training procedures made phenomenal and significant gains, while children tutored by other children without this training made no progress.

Niedermeyer's study (1971) on the effect of trained vs. untrained elementary school tutors as viewed by two independent observers found that the trained tutors rated significantly higher than the untrained tutors in five of the seven trained behaviors. These behaviors included use of praise, confirming correct responses, and modeling the correct response to correct an error. The untrained merely repeated the

question and either waited or prompted, didn't confirm and rarely praised. In addition to observing, Niedermeyer studied the academic progress of tutees with the highly structured program and found that groups with untrained tutors made imperceptible gains while those with trained tutors made highly significant gains in reading skills.

In recent years there have been many specialized tutoring training programs published, which include excellent manuals and materials for tutors as well as suggestions for supervisors. They also include suggestions for materials to be used, learning games to hold the interest of tutors, and even kits of materials and tools for the entire process. These materials are discussed further in the section of this paper on materials.

The length of training varies from a few hours to a few weeks with the briefer training programs being used for peer or cross-age tutoring where the tutors have relatively recently had experience with the subject matter to be learned. The longer training programs have been used for adult tutors who have to learn or relearn the subject matter as well as the tutoring process. Most frequently, these tutor training programs include a great deal of emphasis on child development and human relations in the tutoring process. The longer training programs appear to be used most frequently where adults plan to tutor several tutees for an extended period of time. In general, most tutor training programs involve some combination of the five points listed on page 11 of this report.

3. Support for the Tutor

We must recognize that while the dyadic relationship between tutor and tutee in the tutoring process is an extremely natural and human relationship, it cannot survive very long without the proper support, no matter how well-trained the tutor or how much the tutee needs the help.

The most simple support for a tutoring program is the designation of a tutor for a tutee with a time schedule for the meetings as well as a place for the tutoring to take place. While such simple support appears to call for very little, it is likely that many tutoring programs have failed because appointments and schedules were not maintained by tutors and tutees and because specific and appropriate places for tutoring were not available or were not used as intended. Many reports in the literature have made clear the way in which elaborate programs of tutoring have failed because of the lack of adequate provision for the time and space dimensions of the tutoring process.

Perhaps the next most important type of support is diagnosing the learning needs of the tutee and breaking these learning needs down into specific skills, subject matter, and learning objectives to be mastered in an appropriate order or sequence. Nonprofessional tutoring can rarely be a complete overhauling of an entire learning program for the tutee. It must be broken into specific learning tasks for which specific instructional materials are designed. This aspect of the tutoring process has been demonstrated repeatedly as necessary in most of the effective tutoring programs reviewed in this paper.

Finally, effective tutoring requires clear evidence that tutees have made achievement and other gains related to the specific learning tasks. This evidence may be represented in the form of brief tests (preferably criterion-referenced), by workbook exercises, and by more direct evidence of vocabulary development, reading comprehension, or mastery of specific learning outcomes in other subjects. Frequently, these types of evidence are provided in the exercises, in textbooks, and in workbooks indicated in the materials section of this paper.

4. Benefits to Tutors

Although tutoring programs have usually been created specifically to help tutees improve in school learning, there are also clear benefits for tutors who accept the responsibility and carry it out in a systematic and effective way.

Perhaps the clearest benefit for tutors is that they improve in their own learning. In Table 1 we summarize the results of 14 studies involving cross-age tutoring programs. In 80 percent of these studies there were significant gains in school achievement for the tutors. These data were especially true for measures of gains in reading and language arts.

TABLE 1

Effects of Tutoring on the Tutor

Study	Grade Level		Significant Gains	
	Tutor	Tutee	Achievement	Attitude toward School or Self-Concept
Morita, 1972	4-6	1-4	Yes	———
Robertson, 1971	5	1	No	Yes
Wuycheck, 1971	5	3	Yes	———
Lakin, 1971	5-6	Pre-school	Yes	———
Roussin, 1971	6	1	Yes	No
Paoni, 1971	6	3	No	Yes
Rogers, 1969	6	3	Yes	———
Boyd, 1969	6	3	No	No
Sheretz, 1970	8	4-6	Yes	Yes
Brown, 1971	High School	4	Yes	———
Hassinger, 1969	High School	4-6	Yes	———
Cloward, 1967	High School	4-5	Yes	No
Strodtbeck and Granick, 1972	High School	2-6	Yes	No
Werth, 1968	12	9	No	Yes
Dillner, 1972	High School	7-9	No	Yes

——— = No evidence

In observing tutors in action, it becomes apparent why tutors are likely to improve their own learning as they attempt to help other students. In order to explain an idea, tutors must understand it at a much deeper level than they did before. They are likely to review materials for tutoring—especially those materials which they have not fully mastered before. Their motivation for this review and reorganizatrion of ideas is that they will face a real audience (the tutee) and they must prove adequate to the situation. The set tutoring time provides the occasion for teaching the material and this set time poses a real deadline for intensifying their efforts to clarify the idea and procedures for themselves.

Furthermore, tutors recognize that they must make the subject matter and skills interesting to the tutee. In effect, in "selling" the ideas to the tutee, the tutors "sell"

them to themselves. It has been found that successful tutors develop an increased interest in the subject in which they are working. The literature also demonstrates that tutor gains in achievement were primarily true when achievement gains were also made by their tutees (Snapp, 1970; Strodtbeck, 1972; Paoni, 1971; Granick, 1968; Ellson, 1969; Rosenshine and Furst, 1969; and Weitzman, 1965).

Ten of the studies summarized in Table 1 collected evidence on the changes in the tutors' self-concept or in their attitudes toward school and school learning. In six of these ten studies there were positive and significant changes in these attitudes toward self or school. In spite of the variety of techniques used to secure these measurements, the results do suggest that changes in affect are likely to take place. We are inclined to believe—although the research evidence is not always clear—that these changes in attitudes are likely to take place only when tutors believe they have been successful in helping the tutees. In fact, we would venture the opinion that if the tutoring didn't suceed, it would be likely that the tutor's attitudes would become even more negative than they were before the tutoring began. This effect was well demonstrated by Strodtbeck (1972).

Strodtbeck (1972) also reports that tutors whose self-image became more positive were those who also showed improvements in their own competence in the subject they were tutoring. He notes that tutors with low levels of ego development made the most positive gains in self-image during the tutoring program.

The most frequent remark tutors made during interviews was, "It feels good to help someone." It is likely that being placed in a position of responsibility for the learning of another is very serious for most tutors. One of the lacks in modern society is the opportunity to feel useful or to have a feeling of worth for making a significant contribution to others. The Coleman report, *Youth: Transition to Adulthood* (1974), strongly recommends that adolescent youth be placed in situations where they learn how to take responsibility (for others) and discharge it effectively. Although there is no clear evidence in the literature about this sense of responsibility, we believe from our own observations that it may be one of the major benefits of tutoring. However, we believe this benefit occurs primarily when tutoring has been effective. We would speculate that this benefit, like the other cognitive and affective gains, occurs only when tutoring has gone well. When it has been frustrating and clearly unsuccessful, it is likely that tutoring may be harmful to both tutor and tutee.

D. TUTEES

1. Who Are the Tutees?

Students assigned to the tutoring process may vary greatly in personality characteristics, socioeconomic status, and aptitude or intelligence levels. Perhaps the one characteristic most of them share is that they are below the average student in their class on one or more measures of school achievement. Most of them believe they are unsuccessful learners and they perceive that this is the reason for their assignment to a tutoring program.

We have emphasized, in the section on learning process, that the group instructional methods tend to be most responsive to some students in the group and tend to ignore or at least provide less help to other students. For the most part, students in need of tutoring are students who have gotten the least out of the group instructional processes.

This brief description of the tutees suggests that potentially they are able to learn as well as other members of their classroom group if provided with the help they need when and where they are having difficulty. It also suggests that the goal of the

tutoring process must be to help the tutees learn to profit from the regular group instructional process. That is, tutoring cannot be a permanent way of learning, even for the less able students in the school. Tutoring is a temporary process to help students become better able to benefit from regular instruction in the school.

Although we have characterized tutees generally as students who are having difficulty in group learning situations, we should recognize that most of the students in the classroom may use tutoring with great benefit at particular times when they especially need it. We regard this process of individualized learning as necessary to correct flaws in learning which are almost inevitable consequences of group learning situations. We have commented on the need for brief feedback and corrective procedures for most group learning situations and have suggested that these corrective procedures should generally be employed through the use of a buddy system or pupil-team learning in which tutor-tutee roles are replaced by less clearcut roles, where a pair of students or a small group support each other in clarifying, explaining, and helping each other in their learning in a variety of ways.

2. Tutees' Needs

We assume that tutees assigned (or who volunteer) to a tutoring program have had repeated evidence of their inadequacy in learning. They believe they cannot learn like other children in their classroom group and they have a strong sense of discouragement about their own capabilities as students. Their greatest need—in our view—is for some evidence of successful learning and for a renewed sense of their own adequacy. We believe this is the paramount need of most tutees and that the tutoring program must be so arranged and organized as to guarantee students that if they will do their part of the process they will succeed in the learning tasks for which they are being tutored. We cannot stress this point too much. The tutoring program can and must insure that tutees succeed in the learning tasks and that they are provided with visible evidence of successful progress—at least on the learning tasks used in tutoring.

But, as we have pointed out in the foregoing paragraph, the tutees have had repeated evidence of inadequacy in learning. A single success in learning in the tutoring situation is not enough to change the students' views of themselves as poor students. While tutor and tutee may derive great satisfaction from an initial success in learning, it is repeated success which tutees need if they are to catch up in their learning and if the tutoring process is to enable them to learn adequately in a group learning situation. Thus, tutees need to be placed in a tutoring program that will continue until they are able to make equally good progress in the classroom.

Tutees are likely to be students who participate very little in the group learning process in the classroom. They are likely to have been embarrassed a number of times by asking inappropriate questions or by giving incorrect answers when called upon and have felt rebuffed by teachers or ridiculed by other students. The relative privacy of the tutoring process makes it possible for them to ask questions without being ashamed of themselves. They are also free to give answers which, if wrong, will not make them feel ridiculous—and they know the errors can be quickly corrected. While the tutoring situation does offer these possible advantages, much depends on the relationship between tutor and tutee. Tutors must be accepting of the tutees' efforts—even if they are wrong. They must win the trust of the tutees, and this requires that they spend enough time with tutees for the trust to develop. Even if tutees would like to place their trust in their tutors they cannot easily do so until they have "tested" the tutors in enough situations to find that they can depend on their tutors and that they can learn more easily in this situation than in the group situation.

But the ultimate goal of tutoring is for the tutees to develop trust in themselves as learners. If they believe that they can only learn in the tutoring situations and with a particular tutor, then the tutoring has further weakened them as learners. Thus, the tutees must become convinced that they can learn with *and* without the help of tutors (Cohen, 1972). It means that the tutees must learn the particular skills and content that are important in school learning, and especially the subject matter which is the prerequisite to learning in the classroom. It also means that tutees must develop skills in learning so that they can organize their learning and engage in processes in which they test and correct their own learning as it takes place. Finally, they must develop enough confidence in themselves to participate more fully in group learning situations in the classroom—the very processes which made for the difficulties in their previous learning. What is being emphasized is that the tutoring process must not make tutees overdependent on tutors and that no matter how successful tutors are in helping tutees improve their learning, the ultimate test of the tutoring process is the extent to which it finally frees tutees of their dependence on tutors or anyone else for their progress in learning.

One test of the effectiveness of the tutoring process may well be that the tutee can assume responsibility as a tutor for helping another student. It is possible to develop tutoring programs where tutees who have been successful then help other tutees with as good results as they themselves experienced as tutees (Gartner et al., 1971, pp. 1-13). This situation also demonstrates to tutees that they are finally independent of their former tutors and they are truly independent learners who can function on their own.

3. Conditions for Progress on the Part of the Tutee

From the discussion in the preceding section of this paper, it is evident that the relationship between tutor and tutee is a paramount factor in the learning process of the tutee. The appropriate matching of tutor and tutee is necessary if the relationship is to be a good one. If there are any difficulties in the relationship, steps must be quickly taken to improve the relationship or to find another tutor who can work more effectively with the tutee. The tutor must win the confidence of the tutee and at no time can the tutor denigrate the tutee for inadequate learning or for the tutor's own personal needs. Tutors must view the tutoring process as one in which they are responsible for another person and especially for the learning of another person. While tutees may start by being overly dependent upon the tutor, they must also put forth the effort necessary to learn well enough and become confident in their own ability to learn.

While the personal relationship between the tutor and tutee must be a friendly and supportive one, we must emphasize once again that the central feature of the relationship should be the learning process. We have referred to studies in which the tutors acted as though the friendly relationship was most important. Those studies found that this interpersonal relationship deteriorated when it interfered with the learning relationship. Tutoring, whether of short or long duration, is ideally a working relationship with the learning of specific skills, ideas, and methods as the primary objective. The atmosphere of friendly human relationships is of great value in enabling the tutee to surmount errors and difficulties.

There are learning tasks that the tutee must accomplish with the aid and support of the tutor. The learning tasks must be ones begun at the learners' initial level of competence and which proceed to more complex learning tasks in an order and pace in which learners can master them in some progressive way. Research on the effects of tutoring generally indicates that structured learning tasks, including highly

programed tasks, are more effective for the cognitive learning of tutees than unstructured and poorly defined learning tasks. It is evident that the tutoring process, although it uses a great variety of materials and procedures, is facilitated by learning materials and tasks that secure maximum tutee participation and response. That is, structured tasks require both tutor and tutee to begin the tutoring process without delay and they structure the relations between tutor and tutee. In these relations, the tutor explains, observes, or listens to the tutee's responses, encourages the tutee to keep at the task, and corrects errors in learning as they occur. On the tutees' part, the tasks require them to participate actively in the learning process and to make frequent responses to the cues or instructions provided by the tutor or the task.

In the materials section of this paper we deal in greater detail with the learning tasks and learning materials proven to be most effective. The main point we emphasize in this section is that the learning progress is not simply the accidental result of two individuals getting together where one has been designated as the tutor and the other as the tutee. Learning in the tutoring process requires that specific learning tasks be undertaken and that most of the time available for a tutoring session be devoted directly to the learning process. Appropriate material (appropriate to the needs of the individual learner) and structured learning tasks are vital to insure that the time is used for learning as well as to make the respective roles of tutor and tutee as clear as possible.

A final condition for tutees' progress in learning is that evidence be available on the actual learning that takes place. This condition is important not only to insure that learning is taking place but also to provide visible evidence to both tutor and tutee for the reinforcement of learning. The nature of the evidence may be exercises or questions answered correctly; specific tasks, such as words learned; reading comprehension of particular passages; reading aloud; or other direct evidence of learning. It may also be in the form of brief criterion-referenced questions and test exercises on which the tutee can perform to some mastery level.

The use of evidence of learning demonstrates the tutees' increased mastery as well as revealing where the tutoring process must reemphasize or reexplain particular aspects of learning before the tutee can thoroughly master them. We must expect that reinforcement and rewards in the tutoring process are initially provided by the tutor as the process begins. These rewards may be in the form of encouragement, small expressions (by work or gesture) about the accuracy of the procedures and responses of the tutee, and other forms of rewards (including concrete rewards, time out for relaxation, or even expressions of warmth and good relations) during the process. These rewards and reinforcements are intended to help the tutee devote the time, energy, and involvement necessary for actual learning to take place. Furthermore, rewards and reinforcements must be those to which the particular learner will respond.

However, as the tutoring process continues, these extrinsic rewards provided by the tutor are gradually replaced by the intrinsic rewards provided by the learning task itself in the form of visible evidence of progress on the task, such as direct evidence of learning or less direct evidence provided by test questions and test exercises on which the tutee demonstrates mastery. Mastery of specific tasks may ultimately form the most powerful reinforcement to the tutees of their learning, especially when it provides repeated evidence of increasing success in learning.

4. Evidence of Effects on Tutees

In Table 2 we summarize the results of 17 studies of the tutoring process in terms of the progress made by the tutee. In 90 percent of the studies, tutees made significant

progress in school achievement measures—largely in the areas of reading and language arts. Thus, it is evident that a great variety of tutoring programs are effective in producing significant learning gains by tutees. This is not to generalize to all tutoring programs. The areas listed here tend to be the more carefully designed studies, with great attention paid to careful measurement of results as well as the use of control over experimental groups.

Many programs described in the literature are unlikely to produce these results, especially when the tutoring process is not continued long enough, when the tutoring program and materials are poorly structured, or when the materials available are inappropriate to the needs of the tutee. However, if the minimum conditions for tutoring emphasized in this report are satisfied, with few exceptions the tutees made clear gains in cognitive learning.

TABLE 2

Effects of Tutoring on the Tutees

Study	Grade Level		Significant Gains	
	Tutor	Tutee	Achievement	Attitude Toward School or Self-Concept
Newmark and Melaragno, 1968	6	K	Yes	———
Niedermyer, 1971	5, 6	K	Yes	———
Keele and Harrison, 1971	Adults and High School	K, 1	Yes	———
Ellson, 1968	Adult	1	Yes	———
Ellson, 1969	Adult	1	Yes	———
McCleary, 1960	Adult	1	Yes	———
Robertson and Sharp, 1971	5	1	Yes	———
Tannenbaum, 1966	Parents	1	Yes	———
Hartwig, 1972	Adult	1, 2	No	———
Bradshaw, 1971	4, 6	1, 3	Yes	———
Rogers, 1969	6	3	Yes	———
Erickson, 1972	7	3	Yes	———
Boyd, 1969	6	3	Yes	———
Paoni, 1971	6	3	Yes	Yes
Cloward, 1967	High School	4, 5	Yes	No
Strodtbeck and Granick, 1972	High School	2, 6	Yes	Yes
Hogan, 1970	Adult	High School	No	Yes

——— = No Evidence

However, the research studies we could find give little evidence of improvements in the the tutees' attitudes toward school, gains in study habits, or gains in the tutees' confidence in themselves as learners. A few studies reported such gains but they were so few that one cannot generalize about the noncognitive gains for tutees from the tutoring process. The major flaw in the research (from our point of view) is not that

such gains didn't take place—it is that very few studies attempted to secure evidence on the tutees' progress in these areas. Given the view that we have emphasized throughout this paper, that the goal of tutoring is to help the tutee become an effective learner in the classroom situation, the absence of appropriate evidence on this and the related attitudinal and behavioral variables suggests that new tutoring studies should make this a central feature of the research.

E. THE ROLE OF MATERIALS IN THE TUTORING PROGRAM

What happens in the tutoring session is central to both the learning and the tutor-tutee relationship. And it is the materials that become the vehicle for the learning and for the relationship. Because the very success of the tutoring program depends on the materials and their appropriate use, their selection assumes top priority.

We have described how use of the principles of learning can lead to ideal learning conditions for individualized instruction in the tutoring situation, if they are implemented consistently. The materials should embody the principles with sufficient detail and directions to enable tutor and tutee to derive the maximum benefit from working together. It is unrealistic to expect the tutor, who has limited experience, to improvise and make decisions about procedures and variations. Although tutors do adjust the pace and number of repetitions, provide feedback and corrections, and re-explain the cues, it is the *material* that carries the load of providing the major cues and opportunity for participation in the subject or content of tutoring.

1. Selection of Material to Make the Cues More Meaningful and Salient

In my observation of tutees, I have noted that their motivation and desire to learn change when the material specifically centers around their own discovered need. They are relieved when they are not forced to repeat drills unrelated to their need. When they perceive the need as real and personal, the reaction is always heightened interest and a willingness to work at the skill. Cues have a new and a deeper dimension when they are personal. Feedback and correction for tutees' very own individual responses and reinforcements all combine to convince them that they can really learn what they thought was hopeless. When the material develops in a step-by-step progression and success is certain, the attention given the limited cue is greatly maximized and the expectation of success is a reinforcement.

Most tutors start with good will but little knowledge of the components of successful teaching-learning strategies for reading and language arts. It is unlikely that tutors would be aware of the need to sequence the materials, not only in small increments, but also in the logical progression of the skill. For example, the material will build in the oral cues necessary for tutees to learn to monitor their own responses, as well as the cues for learning procedures to follow in applying the skill in new situations. This cue-building liberates tutees from overdependence on their tutors. Tutees can then become convinced that they can learn with or without the help of their tutors.

Material in reading and language arts must meet three minimum requirements to satisfy the principle of making cues salient and meaningful:

a. It must be based on specific diagnosed skill needs of tutees for which they perceive the need.
b. It must be systematically organized in a sequence of planned tasks with the essential oral component built in.

c. It must provide clear models of correct responses, desired behaviors, and appropriate procedures that tutors can use to develop independence in tutees.

2. Selection of Material to Insure Maximum Participation

Participation with sufficient practice is possible only where material provides adequate positive and negative instances in a variety of contexts at both recognition and recall levels. It is almost impossible for tutors spontaneously to invent example after example for the variety of instances necessary for practice; they must be built into the material. Many tutors have included games provided by supervisors to give tutees the necessary repeated practice and relieve the tedium of drill.

We have found that human interaction is essential in sustaining participation over any period of time. In observing in classrooms, I have found that while some kits are used extensively, many attractive reading and language arts kits remain untouched. The student who needs help needs it from another person in relation to the material. The materials by themselves don't do it. The tutoring situation provides the time and place and procedure for use of the materials, but it is the human relation that keeps tutor and tutee at the task for the contracted time.

A minimum requirement for selection of material to insure maximum participation is that the material have built-in required overt responses that provide the practice of positive and negative instances in a variety of contexts.

3. Selection of Material to Insure Appropriate and Valued Reinforcement

Tutors furnish much of the reinforcement in relation to the use of the material. Methods of role playing the use of reinforcement will be included in the directions for tutor training in a well-planned tutoring program. This state of affairs was well illustrated by Niedermeyer (1971) and von Harrison (1971) in their research, which demonstrated that the variety, quantity, and appropriateness of reinforcement given by tutors was in direct relation to the application of their tutor-training materials. The interpersonal relationships that trained tutors were able to create were much more positive than those of untrained tutors, as were the achievements. These findings suggest that the preference of some program planners for a one-to-one relationship, without regard to material, in a tutoring situation has produced neither the warm relationship nor the desired cognitive gains. The first reinforcement by success is completely dependent on the appropriate material and its correct use. Material geared too high will frustrate tutees and prevent trust from developing. As tutees perceive the pertinence of the material to solve their own particular problems, they are motivated to develop and continue a trusting and positive relationship. Repeated reinforcement by success forms the foundation for a positive feeling toward themselves and their tutors. The relationship, then, develops through exclusive attention from the tutors, encouragement in the use of the material with nonpunitive feedback and correctives, and, one hopes, humor.

In addition to the tutors' positive reactions acting as an energizing source of reinforcement, the materials themselves provide *intrinsic* reinforcement as the tutees complete the tasks successfully.

A simple record system, such as a checklist, provides instant information for both tutor and tutee concerning the results of their work, and helps maintain motivation and enthusiasm for the tutoring. The record system, an essential component of the materials, is used to monitor progress on the learning tasks and becomes a social as well as a personal reinforcement. The information on progress in the checklists has

been useful to teachers in altering the materials when necessary. The checklist, combined with the results on formative tests, becomes the criterion for teachers' decision on tutees' readiness to rejoin their group.

Finally, there should be some choice of material, such as games, jokes, riddles, and stories, for application of skills and to reinforce reading for enjoyment. Material attuned to ethnic groups in the idiom of their culture, with which tutors and tutees can identify are great favorites. This variety of materials available in a materials center for the tutors would supplement the structured materials which form the main part of the tutoring session. Many tutors have enjoyed creating their own supplementary material. There are three minimum requirements in selecting material that will insure appropriate and valued reinforcement:

a. Select materials with provision built in (or supplementary) for tutor training in regular use of reinforcement techniques.
b. Select materials with a record form such as a checklist built in to the daily procedures which will monitor progress and provide visible evidence of success for both tutor and tutee.
c. Select and make additional material easily available from which tutor and tutee can choose for application of skills and for mutual enjoyment. This material may be tutor-made.

4. Materials Available on the Market

At the beginning of the 1960's there was little individualized instructional material on the market. Since then publishers have come out with a plethora of diagnostic, prescriptive, individualized materials, including many multimedia materials and kits. In addition to these materials for general individualization of instruction, specialized tutoring materials are burgeoning. They include several programed packages for tutor and tutee.

A recent addition which should prove useful is a tutoring component as an integral part of several of the basal reader programs to be used after formative, criterion-reference tests have been administered and specific areas of weakness pinpointed. After brief tutoring, the tutees rejoin the group.

A brief listing of some of the sources of available tutoring materials for reading will be listed in the appendix.

5. Structured vs. Nonstructured Materials

There has been much controversy about materials for tutoring. Some authors have recommended nonstructured, tutor-selected or tutor-created content (Gartner et al., 1971; Thelen, 1968). Gartner et al., make the point that "it is the creativity of the tutor in making his own materials that is central in holding his interest and in producing gains for him." This group believes that if tutors are challenged to be creative about the materials and content, they will perform best and develop a deeper commitment, which they will then communicate to the tutees. We should note that programs stressing creativity of the tutors, in large part, were designed for the benefit of the tutors more than for the tutees. Thelen (1969) also stresses the human relation aspect of the tutoring program and the unusual opportunity presented by tutoring for developing a "caring relationship," so needed in our schools. He describes the feeling of camaraderie between the tutors as they planned a wide range of activities, ranging from demonstrating science experiments to performing puppet plays, and as they discussed and ironed out problems. Similar feelings were generated between tutors and tutees as they worked together.

In the literature on structured vs. nonstructured tutoring programs, there is clear evidence that significant gains in achievement have resulted consistently from structured programs when they have been used appropriately (von Harrison, 1972; Niedermeyer, 1971; McCleary, 1971; Ellson, 1968, 1969; Robertson, 1971; Cloward, 1967; Hartwig, 1972; Harris, 1967; Rogers, 1969; Bradshaw, 1971; Hassinger, 1969; Tannenbaum, 1968; Snapp, 1970). Very positive subjective reactions have been reported by most persons involved in the nonstructured programs, but these reactions have not always been supported by statistical evidence of learning gains. Where the tutoring program has been initiated to provide for the learning needs of the tutees, the structured programs cited above have proven effective. In the learning of essential skills, the risk is too great to depend completely on tutor-selected material which may not be keyed to the specific needs and the appropriate starting point for the tutees. Also, the creation of useful and appropriate materials is such a complex and time-consuming operation that it is difficult to maintain the tutors' enthusiasm for it. Tutor-made materials are likely to emphasize tutor preferences rather that the needs of the tutees. Progress will be made, but the opportunity to maximize the learning of the essential skills is often lost.

Structured programs make possible the division of the material into sections or modules to provide limited attainable goals, with visible evidence of mastery for each. Such programs may also include structured procedures with regular classroom material. Von Harrison (1972) has emphasized that structured tutoring is not just a set of materials, but a teaching technique that can be adapted to any subject matter.

Another advantage of a structured program is the flexibility it provides for maintaining continuity of tutoring, even when there is a change in tutors.

To summarize, the effects for the tutees are greatest when the material is more structured. The effects are least when the tutor is expected to be original and creative and is unable to be so.

F. THE SUPPORT SYSTEM

There are certain conditions which must be met in organizing and maintaining an effective tutoring program. These include careful structuring of the situation in terms of specified tasks, time, material, and procedures; sustained support and encouragement of tutor and tutee by the teacher or supervisor; and feedback and correction as needed. The support system also must include provision for visible evidence of achievement and other gains by tutees as well as tutors.

The support system is responsible for the initiation of the tutoring program, its maintenance, and the securing of evidence on the outcomes. In this section we will briefly describe the minimal conditions for various persons in the support system.

In the past, the initiation of tutoring programs has been largely the result of program support by foundations or government agencies. All too frequently, a large grant was available for the purpose, and programs were initiated in response to the availability of such funds. If the writer is correct about the need for individualized instruction as a supplement to group instruction, it is likely that increasingly tutoring will be initiated within regular school programs and school budgets. That is, tutoring and related individualized instruction are indispensable supplements to group instruction and must be provided at a relatively low cost on a sustained basis in such a way that they are constantly available in close relation to group instruction in the schools.

The initiation of a tutoring program must depend on clear evidence of the needs of the potential tutees. Such evidence may be determined from school records, teacher judgments about student progress, and some analysis of the particular

objectives that might require individualized instruction. Diagnostic tests, survey test data, and other evidence have frequently been used in making decisions about the need for a tutoring program.

The selection and training of tutors has been discussed in the tutor section of this paper. Here we wish to emphasize that the support system assumes responsibility for these aspects of the program. Supervisors should train the tutors. Training by supervisors becomes the model for tutors in their own tutoring (Bank Street College, 1973). However, identification of potential peer or cross-age tutors may in part be done by teachers because they are in the best position to know the personal and learning characteristics of both tutor and tutees.

In our view, almost every student is likely to need individualized instruction and help at some time. Given this view, peer or cross-age tutoring is not a matter of selecting the few students who need tutoring. It is a matter of determining *when* an individual student can make best use of tutoring or other individualized instruction. While ideally students might make this decision voluntarily and on their own, it is unlikely that they will do so frequently. The classroom teacher is probably in the best position to determine when a particular student needs this type of help as well as the special topics, skills, or objectives on which the student needs the help.

Ideally, tutoring should be related to a sytem of evaluation and to other evidence-gathering, and schools usually maintain such a system. It should be used for diagnostic purposes and as a basis for providing visible evidence of the effects of the tutoring program on the learning progress of each student.

In the section on material we suggested something of the variety of learning material that has been found useful in tutoring programs described in the literature. Here again, the support system must develop a library of materials to be used in a particular tutoring program. Teachers are likely to play a major role in determining the materials to be used with their students. Even more useful would be teachers' suggestions of the specific material to be used for a particular student at a particular time.

The logistics of a tutoring program are a constant problem for the support system: Bringing tutors and tutees together to work with each other, providing space and material for the process, monitoring the tutoring so as to make changes when necessary, and maintaining a simple record system. If the system is arranged well, many of the details can be worked out by tutors and tutees themselves. Many of the tutoring programs reported in the literature have failed because the logistics were too complex or because even a simple system was not carefully maintained.

Finally, someone providing the support system must have a deep commitment to individualized instruction provided by a tutoring program. Without this commitment and support, a tutoring program is likely to be a sporadic effort which can't be sustained for more than a brief period of time. Here again, the literature provides many examples of tutoring programs which fell apart after a few months or a year of effort. Here we believe that the teachers must play a vital role in providing some of the commitment, although finally a supervisor of the tutoring program must be the central force in maintaining the tutoring program and the support system.

In the next section, we will discuss the roles various persons in the school may play in the support system, with special emphasis on teachers as the key persons.

1. The Teachers as Key Persons in the Support System

Teachers are in the best position to know the learning needs and characteristics of the tutees, the competence and personality of the tutors, and the types of materials likely to be most effective in the tutoring program for a particular school subject and

for a particular tutee. From these considerations, we regard teachers as playing a vital role in the planning as well as the support of individualized instruction to supplement the group instruction provided for the students in the classroom.

While it is necessary for a school tutoring program to be developed and maintained by a supervisor who accepts responsibility for the program, it is unlikely that a tutoring program can function very long without securing the cooperation and support of the teachers in the school. In addition to consultation on the learning needs of the tutees, identification of possible tutors, and the selection of materials, teachers may play a vital role in other aspects of the tutoring program.

Teachers are likely to be the people who make provision for the assignment of individual tutees and tutors to the tutoring tasks. They may also help to monitor the tutoring to insure that both tutee and tutor are making learning gains from the process. The teachers' evaluation data on individual student progress may be used to provide visible evidence of the effects of tutoring.

Probably the most important role of the teacher is to encourage the tutors and the tutees. Teachers can do much to assure tutees that they can and will learn if they participate actively and devote themselves to the group as well as to the individualized learning instruction. They can provide evidence to the tutees that they have made real learning progress when this is really the case. Teachers also are vital in assuring tutors that they can help other students and that when they do they are not competing with the teachers. If teachers can provide positive reinforcement for both tutors and tutees, the tutoring is likely to go well. If teachers are unable to provide this reinforcement or if they are negative toward the tutoring it is unlikely that the program will continue very long.

While teachers frequently give verbal support to the need for tutoring and may even cooperate in the selection of tutors, tutees, and materials, it is quite common for teachers unwittingly to interfere with the success and continuance of a tutoring program. The learning of their students is the primary source of reward for the teachers. They derive especially great personal and professional satisfaction in helping students who are having difficulty, and they are reluctant to relinquish this responsibility to another student since this may limit their rewards and may threaten their feeling of professional competence. Teachers who really are threatened by tutoring are able to find a great variety of obstacles to the program—lack of time or space, pressure of other student activities, lack of confidence in the tutors or tutees, etc.

One underlying reason for the resistance of many teachers to tutoring is the role in which teachers have been placed in the schools. The teachers are frequently cast in the role of sole providers of instruction and learning for the students in their classes. The teachers come to believe that children cannot learn without them. Some teachers become convinced that they are betraying their professional responsibility if their students learn from others—other students, other adults, even from the parents. Learning is regarded as what goes on in the classroom, and teachers must do all the teaching. Under these conditions, tutoring is viewed as a threat to the teachers' professional role and as a criticism of the teachers' professional competence.

Much of the teachers' training, supported by the professional views of the colleagues, has cast them in the role of the possessors and dispensers of knowledge. Seldom has the emphasis been on the teacher as a manager of classroom learning through a variety of teaching-learning strategies. Many teachers have feelings of reluctance and guilt about delegating some of the responsibility for learning to the students themselves or to other students as assistants in the process of tutoring individual students in need of help. As we mentioned in the section on tutors, the new Coleman report on youth (Coleman et al., 1974) recommended that tutoring could serve as one avenue through which youth could take responsibility affecting other

persons and learn to discharge it effectively. The report cautions strongly that youth can only carry out this responsibility effectively under careful supervision that fosters the development of trust and encouragement between tutor and tutee. "Without such supervision it can lead to sadism, ineffectiveness, or mutual frustration of the young person and the children for whom he is responsible (p. 134)."

In recent years, two movements have occurred in the field of education which have made teachers acutely aware of the need for individualized instruction to supplement group instruction. The first is the recognition that most children can learn if provided with individualized instruction when they need it. A great deal of research has been done in recent years in the schools which has demonstrated that various teaching-learning strategies and new curriculum and instructional approaches can be used to enable almost all students to learn to a very satisfactory level. This evidence has led to a rising aspiration level for all students. It is no longer necessary for a few students in the class to learn at the expense of the other students in the class. Teachers can no longer claim acceptable progress for a class when only a third or a half of their students have learned well.

A second force likely to emphasize further the supplementary value of individualized instruction is the increasing concern of parents and the community that the children do learn well in the schools. No longer are parents and the community satisfied with mediocre progress. There is a constant search for ways in which the teaching of children may be improved in order to assure most children of an effective use of the long period of time they are required to spend in school. Government programs of special support for the schools, the hiring of aides and teaching assistants, pressure for accountability of the school, and search for improved curriculums and more effective methods of teaching are all symptoms of the increasing concern for improvement in the learning of students in the schools.

While we do not wish to suggest that tutoring is the new panacea, we do emphasize that group instruction must be accompanied by some form of individualized instruction if *all* the children are to learn well in the schools. It is likely that teachers will change their views about students' potential for learning as evidence accumulates that almost all children can learn well when given the time and help they need to succeed in learning. It is likely that teachers will accept the necessity for all children to learn well if they are truly accountable for the learning progress of the children placed in their charge.

2. Other Sources of Support

When the principal sets up a policy of schoolwide support, the tutoring program develops a momentum of its own, expecially when, in addition to the enthusiasm the principal inspires in the staff, budgetary and scheduling considerations are provided for setting up a library of materials and a member of the staff is delegated to be responsible for the execution of the program. With the expectation of high achievement levels and moral and material support, it becomes less necessary to persuade each teacher to participate in the tutoring program.

Schoolwide support makes two types of tutoring patterns beside intraclass tutoring more readily available; cross-age tutoring and pairing of classes in which "olders" teach "youngers" (Newmark and Melaragno, 1969). These patterns permit a greater flexibility in the match of tutors and tutees.

When, in addition to staff support and principal support, the parents are alerted to provide their support at home, the effectiveness of the program is multiplied many times over. Parents have a profound effect on their children by listening to them read

and giving them praise and recognition as they increase their proficiency in reading and writing.

The Granick study (1968) demonstrated how community support and pressure in Newark motivated tutors to intensify their efforts and raise achievement levels far beyond expectancy levels. When tutors realized that the funding for continuation of the program depended upon the achievement results they were able to obtain, their motivation increased.

G. MAJOR NEW RESEARCH NEEDED

We have taken the position throughout this paper that the primary goal of tutoring is to enable students to learn more effectively in the group instruction presented in the classroom. This position views tutoring as a temporary and remedial process. The research suggested for the future largely deals with aspects of the relationship between group instruction in the classroom and tutoring or some other form of individualized instruction.

1. The research available on the effect of tutoring on tutees makes it clear that tutees typically gain significantly in cognitive achievement, but it provides little evidence on other possible affective changes or on later progress in the classroom. The major type of research necessary is a longitudinal approach which follows successful tutoring programs for a minimum of two years. The emphasis in this research should include the short term changes in achievement now included as well as affective changes in self-concept, attitude toward school, and interest in particular school subjects. It should also include adjustment to the regular instruction as well as behavioral changes in classroom participation.

It is imperative that some aspects of such longitudinal research include intervention at various times to give temporary tutoring and other support to the tutored students. Thus we are advocating longitudinal research on tutoring which would include a control group, a tutored group, and a tutored—further-help-as-needed group. The aim of this research would be to determine what the majority of students need in order to learn effectively under regular classroom group instruction.

Throughout the paper, we have emphasized the distinction between group instruction and individualized instruction, and have regarded the latter as a necessary supplement to classroom instruction for the majority of students to learn well. We view tutoring as an excellent form of individualized instruction for remedial purposes, and therefore regard it as temporary. Something resembling tutoring—the buddy system or pupil team learning—may be viewed as a preventive rather than a remedial type of individualized instruction. Such forms of individualized help stress the relative equality of the students, and they may be concurrent with regular group instruction throughout the academic term.

2. We recommend research into the conditions necessary for student interaction to provide supplementary individualized learning. The research should concentrate on alternative ways of having students help each other on a regular basis, the kinds of feedback and corrective systems which are most effective, the effects of such procedures on cognition as well as affective outcomes of learning, and the long term effect of the appropriate combination of group and individualized instruction on students, the teachers, and the school as an institution. It is especially important that this research be done in the early years of school, because the development of learning in these years has major consequences for the student's entire school career.

In the section of this paper on the support system for tutoring, we emphasized the importance of the teacher in supporting or preventing the successful development of tutoring programs. We have pondered why the little red schoolhouse made such

effective use of peer and cross-age tutoring, while many modern teachers with just as much achievement variation in a heterogeneous class regard tutoring as a threat to themselves as adequate teachers.

3. While we can note many differences among teachers, students, and goals of education in these two situations, these differences do not convince us that the situations are so very different. We believe that the key factor in explaining the reluctance of many modern teachers to permit or to encourage and support tutoring has to do with the role definition of teaching in modern society. We recommend research on the ways in which teachers view themselves and the factors in selection, training, and school organization which strengthen these role definitions. While we do not necessarily believe tutoring is the only type of individualized instruction to supplement group instruction, we regard some type of individualized help as absolutely necessary to correct the inevitable learning problems posed by group instruction in schools throughout the world. The goal of the research should be to determine what forms and arrangements for individualized help are most congruent with the role definitions of modern teachers and to determine how individualized help of some form and role definitions of teachers may be altered in order to secure support and encouragement from teachers throughout the country.

II

DEVELOPMENT OF CLASSROOM TUTORING PROCEDURES

A. SHOULD A TUTORING PROGRAM BE USED IN A PARTICULAR CLASSROOM?

Every classroom teacher should give consideration to whether or not some use of tutoring should be made in his or her classroom. While more than 10,000 tutoring programs have been reported at the classroom level, conditions vary so greatly from class to class that each teacher must, in the final analysis, determine whether peer or cross-age tutoring would be a useful resource for a particular group of students.

It is now well accepted that most children in the school can learn to a very acequate level if provided with the extra time and help they need.

1. Are there any children in the class who are unlikely to "make it" or learn well under present conditions?

We suggest that each teacher make a list of the children who are not learning well at present. What do they need to learn which is fundamental for this course or grade and is likely to be a basis for learning in the subsequent grades?

Some teachers are able to answer these questions by noting student errors and weak areas in the oral recitation, reading, and writing that students do in class. Some teachers not only have made lists of students and their difficulties, but also have noted some of the reasons for these difficulties: lack of prerequisite learning, home

environment, motivation of students, inability to be attentive in class, and lack of involvement in the learning and social processes in the classroom.

Many teachers are able to provide answers to these questions on the basis of classroom tests, diagnostic tests, and standardized tests which have been used with their students. This evidence is especially useful if teachers make lists of the specific skills the students need and then, for each student in the class, notes whether individual children have mastered them or need much help before they will master them.

2. Can teachers provide each of the children the extra time and help required to bring them to mastery in the specific skills they need?

Some teachers believe that they can do the entire job by themselves, especially when only a few students need the extra time and help. Others come to recognize that there just aren't that many hours in the working day, and that even if they were willing to work 25 percent to 50 percent more hours, it just isn't enough time to provide help for all the children in the class who need it. This is a difficult admission for any teacher, especially for teachers who believe they must be directly involved or personally responsible for any learning that takes place in the class.

3. What is the best available method of providing the help needed?

Children who need help can be provided with it in a great variety of ways. If there are funds available, paid aides or tutors can be hired to help the children who need it. If funds are not available, can the parents of the children in the class be counted on to give the help and time necessary? A third procedure is peer or cross-age tutoring. The choice of procedures for helping the children must be a local one and the teacher must consider the alternatives and determine which of these are useful and available for the short run and which of these are the most adequate to insure that almost all of the children will be provided with the extra help they will need during the entire term or year.

4. Do the teachers really believe their students can learn the specific skills they need if given extra time and help?

Unless teachers sincerely believe each student can learn and convey this feeling to the children, the children themselves will not believe they can learn. Previous failure to learn adequately makes children even more dubious of their own ability. Aides, tutors, parents, and tutoring programs will be empty gestures unless the teachers can convey the necessary faith in learning possibilities to each of their pupils. Especially if the tutoring process is to succeed, teachers' expectancy must be reinforced by repeated and visible evidence of success, even in small learning steps.

B. STEPS IN PLANNING A TUTORING PROGRAM

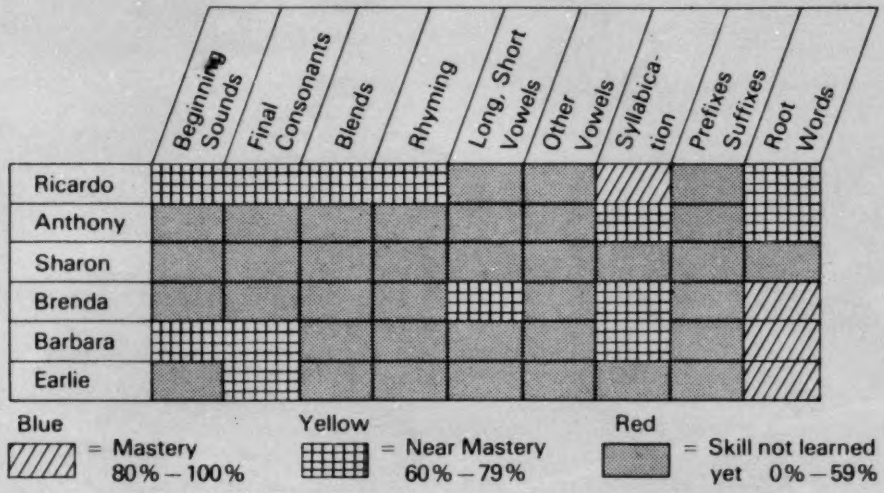
If teachers decide that some use of peer or cross-age tutoring would be a useful adjunct to classroom procedures, they must determine who needs what help, who can provide it, what material is useful, what training of tutors is required, and how the training can be provided. The teachers must recognize that, while the tutoring must be under their supervision, there are many persons and resources available to plan and initiate the tutoring.

1. Identify the Students Who Need Extra Time and Help

While most of the emphasis in tutoring is on the necessary cognitive skills and subject content, the research on tutoring programs has revealed the great value of such programs in providing for some of the social and emotional needs of individual children. Most tutors and tutees can profit from relating to peers in a cooperative and helpful relatonship rather than on a competitive basis. Unusually quiet or withdrawn children are frequently helped by relating to a single person interested in them both as persons and as partners in working together.

Most schools make some use of classroom tests, diagnostic tests, and standardized tests to determine the children who need help and the types of help they need. In classrooms we have worked with in a large city, teachers converted the findings of such tests into a diagnostic chart for the entire class. Below is an excerpt from the diagnostic chart used by our teachers in relation to the basic reading skills at the middle grade levels.

Work Attack Skills



The teachers who have used such charts are able at any time to determine which students need the most help—the children who have the largest number of red-coded spaces. But, even more important, the teacher is able to determine which basic skills a number of children need to learn and this determination can be the basis for a specific and detailed plan for the tutoring program. Ideally, tutoring should begin with the skills and then determine the children who need help on a specific skill.

If teachers are at make use of peer or cross-age tutoring, the appropriate use of a chart like the one above enables the teacher to determine who can be tutors and who should be the tutees, what training is necessary for the tutors, what material is necessary, and what evaluation is appropriate to determine whether children have made the necessary progress.

2. Selection of Tutors

Any students who have mastered a skill can serve as tutors for that skill, provided they are able to learn to take the responsibility for giving specific help to

another student. The tutors need not be restricted to the few top students in the class or only the most mature students. If possible, select a tutor who will benefit from the relationship and the tutoring task. Select the students who have mastered the basic knowledge or skill and who are willing to tutor someone, and then give them the brief training necessary to insure that the tutoring will be successful for both tutor and tutee.

Where the tutees are in the second grade or lower, or where they are very immature, it is likely that tutors for cross-age tutoring may have to be 2 or 3 years older that the tutees. At grade three or above, peer tutoring should work quite well. Where either the tutee or the tutor is very hostile or aggressive, the tutoring process may require more supervision that is usually necessary.

3. Training of Tutors

The training of tutors who have already mastered the skills or subject matter for which they will be tutors, may be limited to 2 hours or less. Typically, as many as a dozen tutors may be trained at the same time, by the teacher or by a school supervisor who has been given ample time to prepare for the training or who has previous experience in this area. Ideally, the tutors learn as the trainer models the procedures. Each tutor is then given an opportunity to role play the procedure once, twice, or as many times as necessary. Tutors need to rehearse the specific material they will use in the tutoring session.

The minimum training would include:

- How to begin the tutoring session and set a positive tone (see Harrison, Bank Street College, Youth Commission)
- A step-by-step procedure for the learning, practice, and application of a skill, using specific materials (*See sample below*)
- What to do when the answer is right: praise and reward
- What to do when the answer is wrong: for incomplete answers repeat the question in different words. For incorrect answers, model the correct answer by saying, "My turn" and telling the answer. Then say, "Your turn" and let the tutee repeat the correct answer. If the tutee almost knows the answer, contrast tutee's answer with the correct answer and let tutee discover the difference. Don't let tutee struggle too long to get the right answer. It wastes time and frustration sets in.
- What to do if the tutoring goes very badly: ask the teacher or supervisor for suggestions
- How to vary the tutoring session with suggestions for keeping high interest and good attention
- How to end the session with a brief game, story, joke, riddle, or some other way of reducing the tension of intensive work
- How to keep a simple checklist or other record form.

Sample of Simple Three-Step Procedure for Learning a Skill

This step-by-step procedure has proved very effective for decoding one-syllable words or each syllable or multisyllabic words. Children used this procedure only for words they did not know.

Materials: Word lists based on single and, later, combined vowel sounds. Review the vowel sould first, orally.

Procedure: Child reads the list to tutor until an unknown word appears. Child then numbers and uses these three steps:

Ex.—The word "trout"

a. Write and say the vowel sound—"ou"
b. Write and say the beginning and vowel sound—"trou"
c. Write and say the whole word—"trout"

The oral and written practice is followed by dictation of five words to test the recall of the skill. Then it is applied in context.

4. Selection of Materials for Tutoring

When teachers have identified each child's needs, the next concern should be, "What material shall I provide to meet these needs?" For most classroom teachers of reading, the option is often whether to review the basal reader or to use other material. In making a decision, the teacher should examine the basal reader level and see if the skill was taught in an earlier grade and is only reviewed at the present level. Would new and different material be more interesting and encouraging to the child?

We have observed in some schools that children who were not making adequate progress with the basal reader remained at the same level of the reader for a second year and even a third. It was the lack of mastery of the essential skills that was holding them back. Several basal reader programs now provide a programed tutoring component to be used at the early levels to provide extra help for those who need it. These materials are intended for use by paraprofessionals or cross-age tutors.

We found that at the middle grades, tutoring tailored to the specific diagnosed needs of each child quite naturally required material designed for those skills. There are excellent materials available. Teachers can use those they already have on hand or they can turn to the resource teacher, supervisor, remedial reading teacher, librarian, material center, or local teacher center for suggested materials for each skill in the chart or other needed areas.

In selecting the materials, the teachers must determine whether the cues are clear enough for the children who are to use them. Could they understand the vocabulary easily or would it present an extra hurdle? Are key pictures used that can foster independence? Is the material developed in small steps to ensure success? Do the concepts progress from the simple to the complex and from the concrete to the semiabstract and abstract, using models when indicated? Does the material provide for sufficient and varied practice? Are there positive and negative instances, and does the material provide for varied application of the skill and its use in context?

It is unrealistic to expect tutors who have very limited experience to improvise and make major decisions about procedures and variations. Tutors should be provided with the materials to be used for a particular pupil for a particular concept, topic, or skill. They should also be provided with specific procedures for using the materials. If the material doesn't work well, the tutor should be encouraged to return to the teacher for alternative materials or suggestions as to changes in procedures. The ultimate test of the materials and the tutoring is that the tutee succeed in learning and that the tutor have a sense of success in helping the tutee learn.

5. Structuring the Tutoring Session

For the tutoring to be effective, *it must take place!* Many reports in the literature make it clear that elaborate programs of tutoring have failed because of the lack of adequate provision for a regular time and space. The children who lack the essential skills will only master them if they practice them systematically and

frequently with feedback and correction. If tutoring is to help them, it needs a regular schedule. This schedule, posted for easy reference, should include the following:

A regular time—Twenty or 30 minutes at least 4 days per week until the skill is mastered.

A regular place—Anywhere that students can do oral practice without distracting others and where they will have enough privacy. It could be the corner of the room, cloakroom, a carrel, the hallway outside the door, material center, or other space in the school. (Some work better with an adult nearby.) Ideally, the same assigned space should be used regularly by a particular tutor-tutee pair.

Material assembled in advance—Material should be assembled in advance so as not to waste valuable tutoring time. Materials should be organized on shelves so they may be obtained easily. Also the material being used by a tutor-tutee pair should be placed on a shelf or elsewhere so that it can be quickly obtained for the next tutoring session.

Clearly specified tasks—Research has shown that in tutoring for essential skills, a structured program is more effective than an unstructured one. The structure we found useful was to follow a sequence of prescribed activities and then provide regular time for optional activities selected by tutor and tutee. The tutors need a checklist to make certain that the prescribed activities are followed consistently. A simple mimeographed checklist proved to be very effective. Such checklists are also used as daily reports of progress and plans for the next session.

6. Monitoring and Evaluating

The teacher, resource teacher, or supervisor should monitor the tutoring to see that it is progressing well. Monitoring includes checking, especially at the beginning, to see that the schedule of time and place are working, that the children have the necessary materials, and that the materials are being used correctly.

Monitoring also includes encouragement, support, and reassurance for both tutor and tutee. If the tutors are not sure they are proceeding correctly at first, they may need help in their new role. If the tutees are not sure they can learn or that they will learn in this new situation, they also need such encouragement.

Monitoring may also include talking to the tutors and tutees, reviewing their logs or checklists, and from time to time observing them. Monitoring is not grading or judging but is to help the children succeed. Occasional checks are necessary to determine how the children are responding to each other and whether or not they are developing a good working and personal relationship. This process provides feedback for the tutor and tutee and is a basis for suggestions, changes in materials and procedures, and even changes in the pairing of tutors and tutees.

Closely related to the monitoring process is the use of evaluation to determine the progress of the tutee and to certify mastery of the skills, knowledge, or other learned competence. The daily checklists provide some evidence of the progress of the tutee. In addition, the post-tests, when the tutees believe that are ready, give clearer evidence of progress or the lack thereof. Such post-tests may include visible demonstrations of skills and competence as well as brief paper-and-pencil-type tests. We have found that brief cassette recordings of oral reading skills—especially before and after recordings—provide very dramatic evidence of progress.

The evidence of mastery of particular skills is the clearest evidence of learning gains. If color-coded charts are used, it is excellent practice to let the children change their own colors on the class chart. Mastery signifies the end of tutoring for a skill and it even indicates that the tutee can now become a tutor for someone else.

We have stressed repeatedly the need for visible evidence of success. It is necessary to reassure the tutor and tutee as well as the teacher and parents that clear learning gains are being made and that the tutoring experience is worthwhile. Unless children have such evidence they become weary and discouraged and find little energy and interest in learning. Evidence of success makes learning an interesting and even exciting process.

Conclusion

In conclusion, we suggest that every teacher should determine whether or not some use of tutoring should be made available in the classroom. The four questions posed at the beginning of this section of the paper will be helpful in making the decision.

If the decision is for the use of tutoring, the next decision is, Who will be the tutor—adult, peer, or cross-age?

The emphasis in this section has been on the simplest, most direct form of tutoring in the classroom—peer tutoring. There have also been excellent results with cross-age tutoring, but this method requires either two teachers undertaking the project or another person in the school planning, scheduling, and following up the program. (See Lippitt, 1975, for clear models of cross-age tutoring.) In the middle grades peer tutoring has worked very well. In the early grades and with children who are immature, an older child will function better as the tutor.

It is to be noted that tutoring is a remedial measure. As such, it can last for a period of a week or two for as long as a semester, depending on the need, the progress, and the personal relationships. As we mentioned earlier, tutoring differs from pupil-team learning, in which two or three children work together as partners. Such pupil-team partners constantly question, challenge, help, share, always verbalizing and getting constant feedback, correction, and human support. This method multiplies the amount of direct overt participation of each child at least five or more times, in contrast to the frequent observation that only five or six children in a class of 30 take part in regular discussions.

Again, we stress that it is sometimes difficult for teachers to accept an additional role as manager of classroom learning. It is our hope that teachers will keep the learning of each pupil central in their thoughts, and, as they weigh the long term effects that mastery of the essential skills will have on the children's future success both in and out of school, that they will make use of any and every instructional device and resource to help the children succeed—including tutoring.

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Programed Materials Designed for Tutoring

Book-Lab, Inc. *Classroom Pairing for Remedial Reading.* Book-Lab, Inc. 1449 37th St. Brooklyn, N.Y. 11218

Mott Basic Language Skills Program. Distributed by Allied Educational Council, Galien, Michigan 49113

Kottmeyer, W. *Conquests in Reading, Dr. Spello,* a wide range of remedial reading materials published through Webster Division of McGraw-Hill

A variety of workbooks published by: Modern Curriculum Press, Lyons and Carnahan (now Rand McNally), Educators Publishing Service

A large supply of high interest paperbacks

Magazines

Games—Reading and Language Games

Newspapers—many programs by local newspapers for schools

Ebersole, Elbert H. *Teacher's Guide to Programmed Tutoring in Reading.* Eberson Enterprises, Pasadena, California 91103

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Bank Street College

Economy—*Keys to Reading*

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Harper and Row—Reading Basic Plus

Houghton Mifflin

Rand McNally (formerly Lyons and Carnahan)

Scott Foresman—*Reading Systems*

III

ANNOTATED BIBLIOGRAPHY

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INTRODUCTION

This annotated bibliography includes selected studies designed to evaluate the effect of tutoring on the tutor and the tutee. In addition, it includes studies of the particular conditions which make for an effective tutoring process. It does not include a summary of the many tutoring programs now functioning throughout the United States.

This bibliography is primarily addressed to the classroom teacher, the key person in every school tutoring program. We also hope that it will be of value to the researcher in planning future research on tutoring. A careful reading of the abstracts as well as the original publications on which they are based should be of value in producing new insights and information about the role of the various components of tutoring as a method of individual instruction to supplement group instruction in the classroom.

It is our hope that the bibliography as well as the entire book will be of value to the classroom teacher and the school administrator who are concerned with problems of tutoring. We trust it will provide answers to some of the questions they ask themselves in deciding to initiate a tutoring program or in evaluating and strengthening their own ongoing tutoring program.

We have tried to follow a uniform pattern of abstracting. Insofar as possible for each reference we have indicated:

1. The major question, problem, or purpose of the study
2. The method, procedures, sampling, and design
3. The major findings and conclusions

Each reference has been categorized to facilitate use of the bibliography. These categories are indicated by letters A through E in the upper right-hand corner of each abstract. The first letter indicates what we believe to be the primary focus of the reference. The categories are not completely independent and the same study may deal with several categories. The classifications follow:

A. Processes in tutorial instruction
B. Tutors
C. Tutees
D. Materials
E. Support system

A summary of the findings of these and other relevant studies is in the appropriate sections of Part I of this book.

Allen, V. and Devin-Sheehan, L. **B,C**

The tutor as role model: Effects of imitation and liking on student tutors.

Technical Report #304, Research and Development Center for Cognitive Learning, University of Wisconsin, Madison, June 1974.

The present study investigated, within a role theoretical framework, the effect of different degrees of pupil imitation on male and female tutors' attitudes and behavior. Seventy-two sixth grade boys and girls tutored second graders of the same sex. A 3 x 2 x 2 factorial design was used (Pupil Imitation—Low, Medium and High; Pupil Liking—Medium and High; and Sex—Male and Female). An equal number of boys and girls were assigned randomly to each one of the six experimental conditions. The major finding was an interaction between Imitation and Sex: the greater the pupils' imitation of the tutor, the less the male tutors liked their pupils and the more the female tutors liked tutors ($P < .02$). Implications for the cross-age relationships of students of different sexes and for elementary school tutoring programs are discussed.

Blank, M., Koltuv, M., and Wood, M. **C,B**

Individual teaching for disadvantaged kindergarten children: A comparison of two methods.

The Journal of Special Education, 1972, 6, 207-219.

This research report is concerned with determining:

1. The most effective method for promoting cognitive development among kindergarten students from disadvantaged backgrounds;
2. The most productive age for initiating an intervention program;
3. Whether paraprofessionals can be trained to use tutorial approaches effectively.

There were 44 New York City public school kindergarten subjects involved in the study (11 Black, 11 Puerto Rican, and 22 Caucasian subjects). All students had scores below the 60th percentile on the Caldwell Preschool Inventory. The subjects were divided into three matching groups on the basis of I.Q. scores derived from selected scales from the WISC. The groups were designated as either structured tutorial program, traditional tutorial program, or control group. Subjects in the two experimental groups received individual tutorial assistance for 15 to 20 minutes a day, 4 days a week over a period of 4½ months.

Six mothers from the school community were trained as tutors. Half of the tutors were trained to use structured tutorial techniques, and the others were trained to use traditional preschool techniques. The tutors received salaries for time spent in training and tutoring. Tutors received ongoing training and supervision during the period of the study.

The research findings were:

1. Students in the structured tutorial program made the greatest gains in Full Scale I.Q. scores (15.0 points). The traditional tutorial subjects showed an increase of 8.1 points, while the control group had an increase of 5.5 points.
2. Followup I.Q. scores obtained a year later showed the structured tutorial subjects had an increase of 19.1 points as compared to 14.5 for the traditional group and 14.3 for the control group.
3. Different tutoring methods are effective with different age ranges. Small-group tutoring by an adult may be more effective for kindergarten students than individual tutoring.
4. Paraprofessionals can be trained as effective tutors. More research is necessary to determine the most productive tutor training techniques.

The authors state that the post-test I.Q. score gains for the experimental groups should be interpreted with care and observed that both groups of tutees showed marked resistance to the tutorial sessions.

Boyd, G.S. **B,C**

Reading achievement and personal adjustment: A study of the effects of participation as a tutor and as a pupil in an elementary school tutorial reading program.

Unpublished doctoral dissertation, University of Alabama, Tuscaloosa, 1969.

This study concerned the effects produced by a tutorial experience on the reading achievement and personal adjustment of sixth grade tutors and third grade tutees. Data were gathered on four variables of reading achievement, and on self-concept, manifest anxiety, and teacher ratings of pupil adjustment.

Sixty sixth grade subjects were equally divided into Experimental, Reading Instruction Control, and Control. The Experimental and Reading Instruction Control groups received three weeks of reading instruction. The Reading Instruction Control then returned to the classroom reading program. The Experimental group participated in a 1-week tutor training program and were assigned to tutees. The third grade subjects were divided into equal groups as Tutees and Control. The tutorial sessions were 40 minutes long for 5 days a week over 8 weeks.

Among the reported findings of the study were the following:

1. Tutees made significantly greater gains in reading than did their controls.
2. Reading gains made by tutors were not statistically significantly different from gains made by their control, but the data indicated that the tutoring experience had served as an effective remedial reading program for the tutors.

Bradshaw, C.I. **C,B,D**

Remedial reading instruction by student tutors in the inner-city schools.

Paper presented at the Annual Meeting of the California Educational Research Association, San Diego, April 1971.

This study was undertaken to determine whether upper-elementary school students who were trained in structured tutoring techniques could successfully tutor primary students identified as having low reading achievement. A total of 26 tutors and tutees from two inner-city schools in the Salt Lake School District, Utah, participated in the study.

The tutors were taught to use the structured tutoring techniques developed and tested by Grant V. Harrison. Tutor training sessions were conducted by a tutor coordinator and a district consultant. Each tutor was assigned a specific tutee. Tutoring sessions were conducted for 15-minute periods each school day for a period of 8 weeks. Tutors kept daily records of tutee progress.

Results reported for one group of tutees showed that 9 of the 12 subjects in this group made significant growth in reading.

Bremmer, B.L. **C,B**

Students helping students program, 1971-72, Final Report

Seattle Public Schools, Washington. Planning and Evaluation Department, August 1972.

A tutorial program using students as tutors was conducted in the Seattle Public Schools during the 1971-72 school year as part of an ESEA Title I project. Called "Students Helping Students," the program used 40 seventh and eighth graders as tutors in reading, mathematics, and language for about 80 first through fourth graders. Following a 1-week training session, two or four older students were assigned to each participating elementary classroom, one or two each day on alternate days for 1 hour. Evaluation of the program was conducted in alternate days for 1 hour. Evaluation of the program was conducted in four ways: evaluation by the program staff on a day-to-day basis, teacher assessment of tutee progress, absenteeism count of the tutors, and an attitudinal survey of both the tutors and tutees at the beginning and end of the program, as well as a feedback survey of the elementary teachers involved. Results showed that almost half of the tutees showed greater academic progress with tutors than without; 60 percent of the tutors improved their attendance records; and there was no significant change in attitude of either tutors or tutees.

Brown, J.C. **A,C,B**

Effects of token reinforcement administered by peer-tutors on pupil reading achievement and tutor collateral behavior.

Unpublished doctoral dissertation, Emory University, Atlanta, 1971.

This study investigated the effects of using 24 Black adolescents as reading tutors for 48 disadvantaged Black children. The younger subjects were assigned to either a contingent, a noncontingent, or a control group. A token system of reinforcement was used with the contingent and noncontingent groups. Data were gathered from a variety of sources: subtest scores from the Metropolitan Achievement Test; a word recognition test; school grades; school absenteeism and tardiness; and teacher ratings of deportment.

Reported findings were:

1. For the tutee groups, the token system of reinforcement resulted in significantly greater gains in Metropolitan subtest scores, school reading grades, the word recognition test, and school tardiness.
2. For the tutors, significant gains were found in Metropolitan subtest scores and teacher ratings of deportment.

Cloward, R.D. **B,C,A**

Studies in tutoring.

Journal of Experimental Education, 1967, 36, 14-25.

This study is designed to determine whether inner-city students who have not completed high school can function as effective tutors for upper-elementary students with low reading achievement. Ninety-seven tenth and eleventh grade students were hired as tutors. There were 57 high school students in the control group. The program was funded by Mobilization for Youth, Inc.

Tutors participating in the experiment had a pretest mean reading achievement score of grade 10.0 as measured by the Iowa Silent Reading Test. Twenty-two percent of the tutors had reading scores below eighth grade level. More that half (63 percent) of the tutors were female. The tutors came from varied ethnic and racial backgrounds (61 percent Caucasian, 19 percent Puerto Rican, 18 percent Black, and 2 percent Oriental).

The tutors participated in eight afternoon preservice training sessions for a 2-week period. The training sessions were devoted to (1) the goals and the organization of the program, (2) the responsibilities of the tutors, and (3) the characteristics and academic achievement of the tutees. Tutors received $11.00 each week in return for 6 hours of tutoring and 2 hours of inservice training. The tutors were assigned specific tutees with whom they met for either one or two afternoons each week.

There were 356 fourth and fifth grade tutees and a control group of 157 students. A special experimental group of 100 tutees recieved 4 hours of tutoring each week, in contrast to the 2 hours of tutoring recieved by other tutees. The New York Tests of Growth in Reading, Level C, Form 1, was administered as pretest and post-test for both the tutees and the control group.

The study concludes that tutors need not have completed 12 years of schooling nor have received extensive training in order to be effective. The study includes a discussion of the feasibility of using high school dropouts in tutorial roles as a way of improving their academic skills. Other major findings reported are as follows:

1. Post-test reading achievement scores showed that tutors made greater gains in reading achievement than either tutee or control groups. The mean score for reading growth among tutors was 3.4 years, in comparison to a mean of 1.7 for the high school control group.
2. Tutorial assistance produces significant gains in reading when the tutee receives at least 4 hours of help each week for a period of 26 weeks. Post-test mean scores showed that tutees receiving 4 hours of assistance each week for 5 months gained 6 months in reading growth, tutees receiving 2 hours a week gained 5 months, and the control group showed 3½ months growth.
3. There was no measurable effect on attitudes, aspirations, or values resulting from the tutorial sessions for either tutor or tutee. No effect on school marks of tutors and tutees was produced during the period of the experiment.

Coleman, J.S. **B**

Youth: Transition to adulthood.

Report of the Panel on Youth of the President's Science Advisory Committee. Chicago: University of Chicago Press, 1974.

A committee of social scientists and educators met regularly for more that a year to discuss the environments in which youths from the ages of 14 to 24 make the transition to adulthood. This book reports the committee's findings and offers proposals for change.

Among other concerns, the committee investigated the role of schooling in the maturation process and proposed that radical changes would be required to make schools more effective agents during the transitional period from youth to adulthood. Schools were found to be inadequate environments either for expanding the personal resources of students or for enabling students to assume responsibilities for others.

The book defines objectives to be considered in reconstructing schools and in creating alternative environments. Two broad classes of objectives were formulated and discussed. The first class of objectives are termed "self-centered":

1. Acquiring marketable skills to insure economic independence and occupational opportunities;
2. Learning to manage personal affairs effectively;
3. Experiencing the cultural achievements of civilization;
4. Becoming involved in personally satisfying activities.

The second class of objectives involves directing the activities of youth toward others:

1. Interacting with people from different age groups and backgrounds;
2. Assuming responsibilities for the well-being of others;
3. Working with others to reach a shared objective.

The commission specifically recommends tutoring as a means of achieving this second class of objectives. It regards tutoring as an activity favorable to the growth of youth.

Damico, S. and Watson, K. **B,C**

Peer helping relationships: an ecological study of an elementary classroom.

Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, April 1974.

The purpose of this study was to conduct an ecological study of a self-contained classroom of 8-, 9-, and 10-year-olds in order to (1) define various techniques through which students offer help to and receive help from peers; (2) identify the types of situations under which these different types of peer-helping relationships are likely to occur; and (3) determine correlations between type and frequency of helping behavior and sociometric status, attitude toward school, and achievement. Students were found to vary widely in their ability to work with peers. However, results indicate that engaging in peer-helping relationships does seem to have some positive effects in relation to school attitude, peer acceptance, and self-esteem.

Deering, A.R. **B,D**

The homework helper manual. (Welcome to tutoring: Grades 3, 4, 5, 6.)

New York: Board of Education, 1966.

This manual for tutors participating in the Homework Helper Program (which employs school students or graduates as tutors for elementary school students) opens with generalizations of the characteristics of third, fourth, fifth, and sixth grade students intended as a base of understanding for tutors. The next section focuses on the varying individual needs of children and presents desirable activities to be used in creating an individual program of instruction (including showing affection, using praise, creating unambiguous and successful learning situations, and developing warm relationships with pupils). Comprising the major portion of the document are excepts from "Helpful Hints" papers written by former tutors which are designed to help tutors develop a good relationship with their pupils and function more effectively as tutors. The final section explores considerations in planning tutorial sessions including the use of time during a session and short and long range goals.

Dillner, M. **B**

Tutoring by students: who benefits?
Florida Educational Research and Development Council, Vol. 7. No. 1-2, 1971.

Historically, most tutoring studies have been concerned with the impact on the students being tutored. Recently there has been a tendency to look at the impact of the tutor and even to focus the program on that impact. A few recent studies have been concerned with discovering ways to improve the program itself. It has not been possible to isolate the factors which lead to success for the tutors, and in some cases they seem to have been successful in spite of the conditions in which they worked. The focus of the materials and skills has been on the tutee even when the researcher's major concern was with the tutor, and the teachers of the tutors adjust their curriculum to support that of the teachers of the tutees, so that the older students can tutor them. These generalizations suggest that classroom teachers can take advantage of the effect of tutoring upon the tutor through the commonalities that exist within the school curriculum and can encourage tutors to acquire new skills. In tutoring the younger students, the tutor is provided with a unique opportunity to transfer such skills from a knowledge level to learning to an application of knowledge through the principle of learning through teaching. By cooperation at the teacher level, both groups would benefit with tutors gaining more from the experience than they have done in the past.

Elliott, D.L. **E,B**

Project 88: Parent participation in the elementary school.
Richmond Unified School District, California, August 1972.

The program described in this paper illustrates the extension of teaching to parents and older children. Project 88, so-called because of the 88 children who were involved during the first year of the program in 1969, is a parent participation program that included a kindergarten, a first grade, and an interage 4-5-6 combination at the Castro School in El Cerrito, California. Five of the minimum conditions that must be met in organizing a parent participation program are:

1. The teachers involved must have classroom programs that are attractive to parents and children and flexible and varied enough to allow others to share in the instructional role.
2. Provisions must be made for many different kinds of participation by parents and volunteers in ways that fulfill important needs of both adults and children.

3. Teachers must provide training and consultation for participants to foster understanding of children's behavior and learning, various knowledge areas, and the ways in which schools and classrooms function.
4. Teachers must provide leadership and organization to insure that the planning and administrative functions necessary to coordinate the resources are carried out.
5. Teachers must obtain administrative support form the local building principal and central office personnel to facilitate operation and integration of the program into the overall school program.

Parent participation grew in the three years of the program beyond the Project 88 classrooms, and we believe that increased involvement will continue.

Ellson, D.G. **A,D,C**

Report of Results, Tutorial Reading Project.
Indianapolis Public Schools, 1968-69

This report dealt with the effectiveness of tutoring underachieving first grade pupils in reading.

One thousand, two hundred sixty-five first grade students took part in the Tutorial Reading Project for the full 1968-69 school year in Indianapolis. During the year 33 of the 39 schools included in the Tutorial Reading Project used the Ginn Basal Reader Series in the first grade, and 6 schools used the Macmillan Series. Tutoring was based on experimental procedures which utilized the Macmillan pre-primer, primer, and first grade reader and the accompanying workbooks.

The tutorial program produced large and statistically significant improvement in reading achievement. Roughly equivalent gains were made for children tutored in Ginn material and for children tutored in an experimental program designed for use with the Macmillan Basic Reader Series.

Ellson, D.G., Harris, P., and Barber, L. **A,C,D**

A field test of programed and directed tutoring.
Reading Research Quarterly, 1968, 3, 307-367

The effectiveness of one or two daily sessions of programed tutoring was compared to one or two daily sessions of directed tutoring used to supplement classroom teaching of beginning reading.

Four groups, each initially containing 60 first graders, were tutored throughout the school year. Two groups were given programed tutoring as a supplement to their classroom instruction, two other groups were given directed tutoring, a more traditional form of individualized instruction. In each pair of groups, one was given one 15-minute session of tutoring daily, the other, two sessions. To provide norms for comparison, control groups, untutored, were matched with each of the experimental groups.

After a year of tutoring, comparison with control groups showed no significant effect upon reading achievement for the groups given one or two daily sessions of directed tutoring or one session of programed tutoring. Two sessions of programed tutoring resulted in a relatively large and statistically significant improvement, with the greatest benefit for poor readers. The findings include relatively high predictability of achievement for tutored children and indications that effectiveness could be increased by closer coordination of tutoring and classroom teaching.

It is clear that tutoring of beginning reading by nonprofessionals can make a significant contribution to reading achievement when used as a supplement to

classroom teaching. Not all tutoring programs are equally effective. The kind and amount of tutoring and the characteristics of the tutored pupils are important factors.

Direct tutoring, derived from current teaching practice had no measured effects on reading achievement. Programed tutoring, a technique derived primarily from principles of learning and programed instruction and only secondarily from classroom practice, produced significant improvement in reading scores when given twice daily, but not when given only once daily for the same period.

Feldman, R. and Allen, V. **A,B,C**

Effect of tutee performance on tutor's verbal and nonberbal behavior.

Technical Report #305, Research and Development Center for Cognitive Learning, University of Wisconsin, Madison, March 1974.

The verbal and nonverbal behavior of sixth grade children tutoring third grade children was analyzed. Results showed that when the student was doing well there was a greater proportion of positively toned affective statements made by the tutor and when the student was doing poorly there were more negatively toned affective statements. Likewise, the nonverbal behavior of tutors tended to reflect the performance of the student. The relationship between verbal and nonverbal behavior was examined.

Fiseman, J.W. and Lippitt, P. **B,C**

Olders-youngers project evaluation: covering the first semester.

University of Michigan, Ann Arbor, Institute for Social Research, February 1966.

This report evaluates the first semester of a cross-age teaching project. Three adjacent inner-city public schools, an elementary, junior high, and high school, were involved. Thirty-three teachers in the schools received 68 older students as educational agents to provide individual attention to their own students for approximately 4 half-hours per week. Training was provided the various helping participants, e.g., receiving teachers, olders, and seminar leaders. This evaluation is based on questionnaires from 25 receiving teachers and 29 olders and interviews with the 5 seminar leaders, 3 sending teachers, and 3 olders. The report deals separately with each element of the program: the youngers, or learners; the tutors, or olders; the receiving teachers; and the seminar leaders. Each section reports on selection criteria and either the effects of the program or reactions to it. The evaluation concludes that teachers are provided with a new way to cope with individual pupil needs. For the learners, academic achievement gains were notable, as were positive shifts in attitudes toward learning and self. The tutors benefited from experiencing concrete evedence of their usefulness and importance to others, both younger children and adults.

Frager, S. and Stern, C. **A,C,B**

Learning by teaching.

The Reading Teacher, 1970, 23, 403-405.

The major focus of this study was to determine which of two types of tutor instruction in reading would have greater benefits for tutors and tutees.

Forty-eight kindergarten pupils in need of remedial work in reading were chosen as tutees. An equal number of sixth graders were selected as tutors. Half of the tutors had scored high on a reading achievement test and half of them had low scores. The tutors were trained in one of two counseling methods: a traditional instructional procedure, or a 5-step procedure which stressed several of the important principles of

learning theory. Kindergarten tutees were assigned to either of the two experimental groups, or to a control (no tutoring) group.

A criterion test demonstrated that the tutored children performed better than untutored children regardless of the tutoring method. Of particular interest to the author was the fact that tutors were equally effective whether they were high or low achievers. The tutoring experience had positive effects on the low achieving tutors in terms of changes in school morale, attitude, attendance, and self-esteem.

Good, T.L. and Brophy, J.E. **A,B,E**

Looking in classrooms.
New York: Harper & Row, 1973.

This book is addressed primarily to classroom teachers and teacher candidates, offering techniques for observing and describing what occurs in classrooms as a prerequisite for improving classroom effectiveness. The authors have provided detailed prescriptive actions for correcting existing classroom problems and have included specific information about the necessary steps in instigating new methods.

A section on classroom grouping (Chapter 8) discusses the advantages of using student tutors and offers concrete advice on implementing a peer-tutoring program. The authors consider three factors to be crucial to the success of peer-tutoring:

1. Creating a classroom atmosphere in which everyone is both teacher and learner.
2. Establishing clear procedures to be followed in tutorial sessions.
3. Organizing creatively the content and format of the sessions.

Harrison, G.V. **B,C,A**

The effects of trained and untrained student tutors on the criterion performance of disadvantaged first graders.

Paper presented at the Annual Meeting of the California Educational Association, Los Angeles, March 1969.

This is an empirical approach to the identification and validation of tutorial skills. It investigates the relative effectiveness of trained and untrained upper-elementary tutors who work with disadvantaged first grade students.

The study was conducted in three phases:

1. Specification of objectives for instruction in linear mathematical equations for the first grade tutees and preparation of instuctional materials.
2. Identification of tutorial skills needed to accomplish objectives and make effective use of the materials.
3. Administration of tests to ascertain the validity of the identified tutoring techniques.

The 16 first graders who had low pretest scores were assigned randomly to either trained or untrained tutors. In all tutorial sessions, the materials used and the time allocated were the same. Post-test scores showed greated gains for subjects who were tutored by a trained tutor.

Harrison, G.V. and others. **A,B,D**

Training students to tutor.
Office of Education (DHEW), Washington, D.C., Bureau of Research, 1969.

This report is concerned with identifying techniques for training upper-elementary students to tutor first grade students in sentence equations. The

study was conducted in four phases and had as objectives (1) identification of effective tutoring techniques, (2) empirical validation of the techniques, (3) development and validation of a measurement of tutor mastery of the techniques, and (4) specification and validation of techniques for training student tutors.

The tutor training techniques identified as successful were employed in training 16 upper-elementary subjects to perform as tutors for first grade students. The tutors were instructed in the use of 10 specific techniques to be used with their tutees.

The Tutor Observation Scale was developed to measure the tutor's mastery of the 10 tutoring techniques. The study reports that 90 percent of the tutoring techniques were mastered by the upper-elementary tutors. Training materials used in the program, the Tutor Observation Scale, and the Tutor Criterion Behaviors are included as appendixes in the report.

Harrison, G.V. and Brimley, V. **C,D**

The use of structured tutoring techniques in teaching low-achieving six-year-olds to read.

Paper presented at the Annual Meeting of the American Educational Research Association, New York, 1971.

This paper reports the results of using upper-elementary students trained in structured tutoring techniques to develop an individualized reading program for low-achieving 6-year-old subjects. The 33 subjects, all identified as being in the lower third of their kindergarten classes, were tutored by upper-elementary volunteers. Three elementary schools cooperated in the study.

The tutors were trained to teach for specific objectives and were given responsibility for a tutee. The tutoring sessions were 15-20 minutes long and occurred on 5 days each week for 6 weeks. The tutors were supervised.

The criterion objectives for the tutees were to recognize seven letters, five sight words, eight sounds, eight to ten phonetic words, and five to eight nonsense words. A criterion-referenced test was given at the conclusion of the 6 weeks.

Three months after the subjects entered first grade, their teachers were asked to rank all members of their classes on reading ability. Only 5 of the 33 students who had received the structured tutoring were ranked in the lower third of their first grade class.

Harrison, G.V. and others. **C,D**

The use of a structured tutorial reading program in teaching nonreading second graders in Title I schools to read.

Paper presented at the Annual Meeting of American Educational Research Association, Chicago 1972.

In this research, upper-elementary students who were trained in structured tutoring techniques were used to teach second grade nonreaders. All the second grade nonreaders, a total of 172 students, in a school district's Title I schools were tutored for 5 months. The 15-minute tutoring sessions occurred 4 days each week, and were designed to remediate reading skills. Control subjects were chosen at random from among the total second grade population of three schools not eligible for Title I funds.

The tutors were trained to teach letter names, letter sounds, digraphs, blending, sight words, and decoding skills. Tutors were also trained in techniques for listening as tutees read orally.

A criterion-referenced test administered at the conclusion of the study produced the following results: 20 tutees had scores of 100 percent correct; 73 had scores above

90 percent; 72 percent of the students had scores of 80 percent or better. Only 8 percent of all students tutored had scores below 60 percent. The results indicated that tutors trained in structured tutoring techniques were successful in tutoring second grade nonreaders.

Hassinger, J. and Via, M. **B,C**

How much does a tutor learn through teaching reading?

Journal of Secondary Education, 1969, 44, 42-46.

This study investigated whether using low reading achievement high school students and high school dropouts as tutors for upper-elementary students with low reading achievement would result in reading gains for both tutors and tutees.

There were six Los Angeles County School districts cooperating with the study. Subjects were 100 high school aged tutors who were employed to serve as individual tutors to 100 students in grades four, five, and six. All tutors met the following criteria:

1. Family income was below the poverty line.
2. Reading achievement was two to three years below expectancy.
3. Previous school attendance was poor.

Tutors and supervising teachers attended 4-hour training sessions occurring on 4 consecutive days. Tutors were taught to use multimedia materials and were involved in planning an outline to be followed during tutorial sessions.

At the conclusion of the 6-week tutorial experiment, the following results were reported:

1. Tutors showed a mean gain of 8 months on the Nelson Denney Reading Test which was used as pretest and post-test for the high school age subjects.
2. Tutees showed a mean gain of 4.6 months on the Stanford Reading Test, used as pretest and post-test measure for all upper-elementary subjects.

The study reported that the tutorial program was considered a success, and that plans were underway for its expansion.

Havighurst, R. **A**

Minority subcultures and the law of effect.

American Psychologist, 1970, 25, 313-322

The paper develops the proposition that success in educating socially disadvantaged students is greatly dependent on educators' understanding the role of rewards in the learning process and then applying that understanding with both students and parents.

The author formulates a theory of the evolution of rewards and punishments in human learning and discusses the research on six educationally significant propositions:

1. Different subcultures carry their children along this evolutionary path at different rates and in different ways.
2. There are differences between ethnic subcultures among disadvantaged groups in the reward systems they teach their children.
3. In general, external rewards (material or intangible) have positive values for disadvantaged or failing children.
4. An effective reward system in a complex changing society must be based on a strong ego.
5. A strongly developed ego gives a sense of personal control and personal responsibility for important events in one's life.

6. People learn to operate at all the several levels of reward by the time they reach adolescence; and the level at which they operate varies with the action area.

The paper concludes with specific examples of the types of rewards likely to prove most productive with disadvantaged children.

Keele, R. and Harrison, G.V. **B,C**

A comparison of structured tutoring techniques as used by parents and paid student tutors in teaching basic reading skills.

Paper presented at the Annual Meeting of the California Educational Research Association, San Diego, April 1971.

In this study the investigators were interested in the effectiveness of paid high school students and parents as tutors to kindergarten and first grade pupils. The pupils were learning three reading skills: naming of letters, sounding of letters, and decoding nonsense words.

A sample group of kindergarten and first grade pupils was randomly assigned to experimental and control groups. The tutoring guide, which prescribed precedures for teaching, was distributed to chosen tutors. The tutors met with the children about four times a week for 15-minute sessions until the children reached mastery of naming, sounding, and decoding. The tutors received no formal training and the tutoring was supervised.

Six weeks later all children were tested individually on specified criteria, and results were analyzed on each of the three skills. Although the difference between the tutored groups and the nontutored groups was not significant for naming, there was a significant difference (.01) for sounding and decoding. The difference between the kindergarteners and the first graders was significant only for sounding. There were no differences in the gains of parent-tutored and high school student-tutored children.

Klosterman, R.E., Sr. **A,C,D**

The effectiveness of a diagnostically structured reading program for fourth grade pupils using students majoring in elementary education as tutors.

Unpublished doctoral dissertation, Indiana University, Bloomington, 1968.

This 6-month study was conducted in order to assess the effect of individual tutoring, small group tutoring, and regular classroom instruction on reading performance in fourth grade pupils in a low Standard English Speaking district.

Ninety fourth graders from three schools were tutored, individually or in small groups, 4 days weekly for half an hour per day. Ninety control subjects from the same schools and from an additional school received regular classroom instruction only. Subjects were assigned to treatment groups on a random basis. Elementary education majors were instructed in principles and techniques of reading and tutoring. The tutors followed a diagnostically structured program determined by the needs of the individual child.

From tests administered in September, January, and April the following results were found:

1. The subjects who were tutored made significantly greater gains in vocabulary, comprehension, and total reading achievement than did the control subjects.
2. Individualized tutoring proved more effective than small group tutoring.
3. The experimental program produced greater gains in the first semester than in the second. There were, however, gains in both semesters.

4. The effectiveness of the program provided evidence for the positive value of a) a diagnostically structured reading program, and b) individual attention for culturally deprived children.

Lakin, D.S. **B**

Cross-age tutoring with Mexican-American pupils.

Unpublished doctoral dissertation, University of California, Los Angeles, 1971.

The investigator studied the effects of tutoring Head Start children on the word recognition, oral reading skills, and teacher expectation of achievement of fifth and sixth grade tutors.

Sixty randomly selected Mexican-American fifth and sixth graders of low academic achievement, but of average or above average nonverbal ability, were assigned as either controls (nontutors) or as tutors to two groups of 30 Head Start children. A second control group of 60 Anglo- American pupils was similarly selected.

For 8 weeks, following three training sessions, the tutors read stories and asked prepared questions to the Head Start pupils, 4 days a week for 20 minutes each session. Pre- and post-tests of word recognition (vocabulary), oral reading, and teacher expectation of success were administered to the tutors, with the following results:

1. All groups made significant gains on the vocabulary test scores.
2. The Mexican-American group of tutors scored significantly higher than the other three groups (that is, higher than the Mexican-American control group and the Anglo-American groups) on the vocabulary test.
3. On the oral reading measure, only the Anglo-American group made signigicant gains.
4. There were significantly greater gains in tutor mean reading scores than were expected on the basis of teacher estimates.

Liette, E.E. **C,B**

Tutoring: its effects on reading achievement, standard-setting and affect-mediating self-evaluation for black male underachievers in reading.

Case-Western Reserve University, Department of Education, Cleveland, June 1971.

The effects of a tutor-tutee relationship on the reading achievement and achievement motivation of underachieving black male children were investigated. A group of 41 tutees and their controls as well as a group of 41 tutors and their controls, all from lower socioeconomic backgrounds, were randomly selected. All subjects were given a nonverbal I.Q. test and were pretested and post-tested on reading achievement. The tutors and their controls were also pretested and post-tested on two psychological variables: standard-setting and affect-mediating self-evaluation for a task of forming words out of 10 scrambled four-letter words in 1 minute each trial for eight trials. The tutoring was conducted for 12 weeks. Analysis of obtained data yielded the following findings:

1. The tutees made significantly greater gains in reading achievement than their controls.
2. The tutors made significantly greater gains in reading achievement than their controls.
3. The tutors established a lower and more realistic standard than did the controls.
4. The tutors took less time to make self-evaluations.

5. The tutors did not have positive self-evaluations more frequently than their controls.

Lippitt, P. **E, D, A, B**

Cross-age helping program.

Paper presented at the Annual Meeting of the American Educational Research Association, Washington, 1975.

The author, a project director for a cross-age helping program in Ann Arbor, Michigan, discusses the premises and organizational patterns of cross-age tutoring. The particular tutorial approaches and resulting student gains reported by several of the more successful cross-age tutoring studies are also discussed.

The paper includes specific suggestions concerning the role of school personnel, the training and inservice required for success in initiating tutorial programs, and a listing of potential pitfalls. Models of successful elementary and secondary school cross-age tutoring programs are provided.

McCleary, E.K. **C**

Report of results of tutorial reading project.

The Reading Teacher, 1971, 24, 556-560.

The tutorial program reported here was designed as a preventive measure to reduce the actual number of failures in predicted reading failures.

The 330 first grade students from four schools who scored below a specified cutoff point on a reading readiness test were assigned to the tutoring project. Half of the pupils were placed in the experimental group (tutoring), and the remaining half were designated as a control group (no tutoring). The pupils in the experimental group worked with a tutor for 15 minutes each day for the entire school year. All tutoring was an a one-to-one basis. Although the adult tutors had had no previous professional training, they were carefully trained for the tutoring which required that they follow a programed procedure such that each moment-to-moment interaction was planned in detail.

Reading performance, at year's end, was significantly better for the experimental group than for the control group on an achievement test. The greatest gains were made by the poorest readers. In addition to gains in reading achievement, it was demonstrated that the tutored children were much less likely to be retained in the first grade that were the nontutored children.

McClellan, B.F. **A, B, C, D, E**

Student involvement in the instructional process through tutoring.

Florida Educational Association, Tallahassee, 1971.

This review of the literature on student tutoring considers four questions:

1. Are there patterns of cross-age, cross-culture, or cross-ability which increase or decrease the tutoring effectiveness?
2. Does a highly structured, controlled program mean better results than informal tutoring?
3. Is the level of learning actually raised for both tutor and tutee?
4. Are there types of subject matter areas which more readily lend themselves to the tutoring process?

A list of positive results experienced by tutors and tutees was synthesized from studies reviewed, and the requirements for evaluating the program were also

considered. Outlines for tutorial manuals were developed and are included in the document for organizers, tutorial managers, and tutors. Included are the following appendixes:

1. Specifications for individualized instruction.
2. The essential elements of the structured tutoring model,
3. Principal reasons why many low achieving students do not succeed in school,
4. Principal reasons why the unique learning characteristics of low achieving students cannot be dealt with successfully in the regular classroom setting, and
5. Basic components of a tutorial system.

Melaragno, R.J. and Newmark, G. **B,C,E**

A study to develop a tutorial community in the elementary school.
Santa Monica: System Development Corporation, 1969.

This is a detailed description of a program to create a "tutorial community" within an inner-city elementary school in Los Angeles. The project focuses on using Pocoima Elementary School students as intragrade and intergrade tutors. It also includes plans for developing tutorial roles for teachers, parents, and community volunteers. The tutorial project is an elaboration of an initial System Development Corporation study which found that the greatest gains in acquiring reading readiness skills by first grade Mexican-American students occurred when peers and fifth and sixth grade students functioned as tutors.

The report includes an overview of the projected 7-year period of the tutorial project. During this period, an additional grade level will be incorporated each year into the tutorial community. The following objectives of the project are identified as essential and are given comprehensive treatment in the report:

1. The role of the student as both learner and teacher.
2. Preservice and inservice training for all participants in the project, including encounter group sessions and workshops.
3. Community involvement, including serving as tutors and as staff members for the project.
4. Program revision based on empirical evaluation.
5. Involvement of teachers, parents, and project researchers in decisions concerning objectives, materials, and evaluation.

Mohan, M. **C, B, E**

Peer tutoring as a technique for teaching the unmotivated.
State University of New York, Fredonia, Teacher Education Research Center, January 1972.

This study tested the hypothesis that peer tutoring would have a significant, favorable effect on the school achievement, motivation, attitude, and self-concept of unmotivated children, both tutors and tutees. A pilot study and a main study were undertaken, using experimental and control groups. The experimental groups had an orientation session before the start of the project, and tutors had a training session. The program was carried out for 8 months in the pilot study and 3 months in the main study. Informal evidence clearly indicated that the program was enthusiastically accepted by teachers, parents, and students. Analyzing the data on five dependent variables, it was found that tutors and tutees in the experimental group evidenced significant growth on measures of academic achievement, motivation as assessed by the teachers and the students, and, for the tutors, in attitude toward school. The only

objectives which were not met were a favorable change in the self-concept of both tutors and tutees and a positive attitude change in tutees, probably due to the short duration of the project. It is suggested that teachers should be provided with training and support for a change to a self-directed instructional program, and a teacher manual is being developed.

Morita, H. **B, C**

The effects of cross-age tutoring on the reading achievement and behavior of selected elementary grade children.

Unpublished doctoral dissertation, University of Southern California, Los Angeles, 1972.

This study was concerned with determining whether (1) tutoring of young students by older elementary students could increase reading achievement scores for both tutor and tutee, (2) an improvement in the behavior of the subjects would result from the tutorial experience; (3) results of the tutoring experiment would be affected by sex, grade level, I.Q., or reading ability.

A total of 184 experimental subjects and 124 control subjects were involved. The subjects were Mexican-American from low socioeconomic backgrounds. Subjects' ages ranged from 6 to 12 years old.

The study reports:

1. Tutees and tutors made significant gains in reading achievement.
2. Sex and age were the variables affecting tutee results. None of the variables examined affected tutor results.
3. A high correlation between reading improvement and behavior was found for tutees. No similar correlation was found for tutors.

Newmark, G. and Melaragno, R.J. **C, E, B**

Tutorial community project: Report of the first year (May 1968—June 1969).

Santa Monica: System Development Corporation, 1969.

This is a progress report of the first year of the tutorial project designed to create a "tutorial community" within Pocoima Elementary School, an inner-city Los Angeles school. In addition to intragrade tutoring occuring at all grade levels, upper-elementary grade students tutored kindergarten and primary students.

The teachers of tutors and of tutees conducted inservice training for the upper-elementary students. Cross-age Helping Program materials, role playing, and instruction in tutoring for specific subject areas were included in the sessions. Tutors and tutees were involved in ongoing evaluation of the tutoring sessions.

The first year of the project emphasized student involvement in self-directed study and in developing positive attitudes toward schooling. Evaluation of the project relied on observation, questionnaires, and teacher comments. Among the findings reported are:

1. The tutoring experience did result in improved attitudes toward school, greater self-discipline, and, in some instances, improved school work.
2. Kindergarten teachers, in particular, reported their students made considerable growth in reading, writing, and mathematics as a result of the tutorial sessions.
3. With the exception of Mexican-American boys, who did not show improvement when tutored by a girl, sex and race were not found to be prime factors in the success of a tutoring relationship.

4. Most tutors preferred some variety in the tasks they were assigned to perform.

An outside evaluation team noted the principal difficulties confronting the project were "the need for more training and support for the tutors; the need for a different school organization that would allow time for planning and development of the tutorial system; and the need for a greatly increased involvement of parents so they would know more about the Project and would be able to support it more."

Neidermeyer, F.C. and Ellis, P. **A,D,B,C**

Remedial reading instruction by trained pupil tutors.
Elementary School Journal, 1971, 71, 400-405.

This study investigated the effectiveness of using fifth and sixth graders in a structured procedure for remediating kindergarteners' reading.

Using a tutor training manual and related materials, nine kindergarten teachers at four elementary schools trained about 75 fifth and sixth grade tutors. The materials the tutors used were highly structured and specifically prescribed for each of the kindergarten pupils on the basis of their performance in the reading program.

Subjects were sampled from each of the classrooms in which the tutoring program was in operation. A nearly equal number of students was sampled from schools without a tutoring program, but with identical reading materials. The change scores of these two groups were compared to assess the effectiveness of the program. The children sampled had been designated as needing remediation by their scores on a set of criterion exercises at the end of the first four units (12 weeks). The tutored children scored significantly higher than the control children on a retest (post-tutoring) on the criterion exercises.

Six of the trained tutors and six untrained tutors were observed and compared to see if there were significant differences in the tutoring behaviors. As expected, the trained tutors displayed significantly more behaviors in the following five categories: engaging in friendly conversation, confirming correct responses, praising correct responses, giving the correct answer, and eliciting the correct answer when the pupil is incorrect.

Paoni, F.J. **B,C**

Reciprocal effects of sixth graders tutoring third graders in reading.
Unpublished doctoral dissertation, Oregon State University, Corvallis, 1971.

This study was undertaken to investigate several hypotheses about the effects of a student tutoring program in reading (comprehension, vocabulary, and attitude) on both tutors and tutees.

Two hundred forty students from sixth and third grade classes were the subject in this experiment. Sixty sixth graders tutored 60 third graders 3 days a week, 30 minutes a day for 4 months. The remaining half of the subjects served as controls.

The following positive results were found:

1. The tutoring program was significantly more effective for students acting as tutors than a traditional program of improving attitudes of sixth graders toward reading.
2. The tutoring program was significantly more effective for students being tutored than a traditional program in improving comprehension for third graders in reading.

3. The tutoring program was significantly more effective for students being tutored than a traditional program in improving the attitude of third graders toward reading.

The following negative results were found:

1. The tutoring program was not more effective for students acting as tutors than a traditional program for improving vocabulary or comprehension for sixth graders.
2. The tutoring program was not more effective for students being tutored than a traditional program in improving vocabulary for third graders in reading.

Plumb, G.H. and Wilkinson, J.C. **C, B. E**

An empirical investigation of the use of paraprofessionals and student tutors in remediating reading deficient primary grade students.

Paper presented at the Annual Meeting of the American Education Research Association, Chicago, April 1974.

In 1972, using Title I funds, a study was initiated to determine the effects of using teacher aides and student tutors in remediating reading deficient second and third graders in the Boise schools. The two schools in the pilot program were located in areas having a high incidence of low-income families. Tutor managers (paraprofessionals) supervised and managed the tutoring program in each school. They trained fifth and sixth graders in the techniques of tutoring basic reading skills, tutored children, gave pretests and post-tests, kept records, prepared the student logs, and kept student profile sheets on each child tutored. The structured tutoring involved the diagnosis of the child's reading skills, individual work with the child using prescribed teaching methods, and a criterion-referenced post-test measuring the knowledge of the child at the end of the tutoring. The tutored group outperformed the control group in acquiring basic reading skills, and of the 54 students who were tutored, only one failed to make significant improvement in reading skills during the relatively short period of 6 weeks that the tutoring program was in operation.

Robertson, D.J. **B**

The effects of an intergrade tutoring experience on tutor self-concept.

Paper presented at the Annual Meeting of the California Educational Research Association, San Diego, April 1971.

This study tested the hypothesis that an intergrade tutoring experience would have no significant effect on the self-concept of fifth grade tutors. Pretest and post-test semantic differential scores were used as measures of self-concept.

A total of 93 subjects were divided into three groups and designated as control group, experimental group I and experimental group II. The experimental groups participated in four hour-long tutor training sessions in preparation for tutoring first grade students to develop sight word vocabularies. During the training sessions, the fifth grade students received instruction in the methods and materials to be used, the objectives set for the tutoring sessions, and expected tutorial behavior.

Members of experimental group I were then assigned first grade tutees. Each tutor worked with a tutee for a 30-minute period 3 days each week for 2 months. Members of experimental group II were told there was a shortage of first grade students needing assistance with sight words, but that tutoring assignments would be made later.

The post-test semantic differential mean score for subjects who tutored was significantly higher than the mean scores for the other two groups of subjects. The

study concludes that the tutoring experience resulted in a significantly different and more positive self-concept for the fifth grade subjects involved. No significant differences bewteen pretest and post-test scores were found for experimental group II or the control group during the period of the study.

Robertson, D.J. and Sharp, V.F. **C, B**

The effect of fifth grade student tutors on the sight word vocabulary attainment of first graders.

San Fernando Valley State College, 1971.

The study investigates whether first grade subjects who were tutored by fifth grade students would show significant gains in sight word vocabulary attainment. Half of the 66 first grade subjects were assigned to the experimental group as tutees, while the remaining half formed the control group. Each of the 33 first graders in the experimental group as tutees, while the remaining half formed the control group. Each of the 33 first graders in the experimental group was assigned a fifth grade tutor. Thirty-minute sessions between tutee and tutor occurred 3 days each week for a 2-month period.

The tutors, identified by classroom teachers as having low reading achievement, attended 4 hour-long training sessions prior to beginning work with the first grade subjects. The training sessions were conducted by one of the investigators and included role-playing, training in tutor behaviors and techniques, the use of the Dolch Picture Word Cards, and discussions of the objectives of the program.

The Primary Word Recognition section of the Gates-McGinitie Reading Test was administered as pretest and post-test for all first grade subjects. Although post-test mean scores revealed that both the experimental group and the control group made significant gains in reading achievement during the period of the study, the mean scores of the experimental group were significantly greater. The study reports that using fifth grade tutors to teach sight words to first grade students resulted in a significantly higher level of reading achievement for the tutees.

Rogers, M.S. **B, C**

A study of an experimental tutorial reading program in which sixth grade underachievers tutored third grade children who were experiencing difficulty in reading.

Unpublished doctoral dissertation, University of Alabama, Tuscaloosa, 1969.

This study investigated the effects of using sixth grade underachievers as tutors for third graders whose reading scores were below grade level expectancy. The subjects were 60 sixth grade students and 40 third grade students. Most subjects were middle class Caucasians. The effects of tutoring on the reading achievement of all subjects was studied.

Sixth grade subjects were divided into three equal groups. The Experimental Group received reading instruction for 3 weeks, tutor training for 1 week, and tutored third grade subjects for 8 weeks. Control Group I received reading instruction for 3 weeks, tutor training for 1 week, and tutored third grade subjects for 8 weeks. Control Group I received reading instruction for 3 weeks and were then returned to the classroom reading instructional program. No special reading instruction was given to Control Group II. Third Grade subjects were divided into two equal groups of tutees and control.

The reported findings of the study were:

1. All sixth grade and third grade subjects showed statistically significant gains on post-test scores.
2. No statistically significant differences in reading gains were found among the three groups of sixth grade subjects.
3. Third grade tutees made gains statistically significant above gains made by the control group.

Rosner, H. **C, B, E,**

Facets of a cross-grade tutorial program.

Paper presented at the International Reading Association Convention, Anaheim, May 1970.

The paper reports the results of a tutorial program using 13 fifth and sixth grade students as tutors for 13 second and third grade students. All subjects were low achievers in reading.

Tutors were trained to use Multimedia techniques and were given instructions for allocating time for specified activities during the tutorial sessions. The tutors also received remedial reading instruction each day.

Tutorial sessions lasted for 40 minutes, 3 days a week for a 10-week cycle. At the conclusion of the cycle, progress made by tutors and tutees was evaluated and decisions were made concerning which students should continue in the program.

Results of the 10-week tutorial cycle were reported as:

1. Tutors gained an average of 1 year, 5 months' growth on the California Test of Basic Skills, and 1 year on the Gates-McGinitie.
2. Tutees averaged 4 months' growth of the Stanford Reading Test and 5 months on the Gates-McGinitie.

The author states that these results are similar to results obtained during 10-week cycles throughout the 6-year period the tutorial program has been in effect.

Factors viewed as essential to the success of a cross-grade tutorial program are cited as "preplanning with school personnel, attitudinal emphasis, orientation-enrichment sessions with tutors; varied multisensory approaches coupled with multimedia learning centers; record keeping by tutors; ongoing supervision, analysis, direction, and evaluating by the reading teacher in charge, and community participation."

Shaver, J.P. **C, A**

Tutorial students two years later: A report on the Logan-Cache tutorial Center for Underachieving Readers and Writers.

Salt Lake City: Utah State Department of Public Instruction, 1969.

This is a report of a Title III funded program designed to assist students identified as performing below their potential in reading or writing. Experiments with differing tutor-tutee ratios were incorporated into the study design. The study was also concerned with determining whether any gains resulting from tutoring assistance would remain after tutoring was discontinued.

Test scores obtained from the California Test of Mental Maturity and the Sequential Tests of Educational Progress were used as the basis for selecting subjects whose academic progress was below their potential. Students from fourth, seventh, and tenth grade were randomly assigned to either the group in which tutees received individual tutoring, the group in which the tutor-tutee ratio was 1:3, or to the control group.

Post-test scores at the conclusion of the first year showed a statistically significant difference between tutee and control group subjects. All experimental tutee groups made gains, but the tenth grade tutees appeared to have received the greatest benefit from tutorial sessions. It is also reported that no statistically significant differences in gains were found as a result of tutor-tutee ratio. A program of delayed testing found that the tutee subjects had retained the gains made over the control group even after 1 to 2 years.

Sheretz, D. **A,B**

Ontario-Montclair school district evaluation summary, cross-age teaching. Ontario, California, 1970.

This study investigated whether eighth grade tutors could effect changes in the learning achievement and social development of fourth, fifth, and sixth grade tutees. The experimental group was composed of 60 tutors and 60 tutees. Control groups were established. Tutorial sessions were 40 minutes long for 3 days a week over a period of 7 months.

Preservice tutor training sessions were conducted by two elementary and two junior high school clinicians. The tutors also participated in inservice training sessions 2 days each week. Teachers of tutees were responsible for designating the content of the tutorial sessions.

The pretest and post-test data were gathered from the following measurements and tests: the language, reading, and math sections of the California Achievement Tests; McDaniel Inferred and Self Concept Scales; and sociograms. Attendance and discipline patterns were also studied.

Reported results of the study were:

1. Tutors achieved a higher mean growth in reading, math, and language than was achieved by the control group.
2. Tutees achieved a higher mean growth in reading and language than was achieved by the control group.
3. Higher mean improvement scores on the McDaniel Inferred and Self Concept Scales were achieved by the control groups.

Snapp, M. **A,C**

A study individualizing instruction by using elementary school children as tutors. *Journal of School Psychology*, 1972, 10, 1-8.

This study was an experimental investigation of the efficacy of peer tutoring under two sets of conditions: systematic reinforcement and nonreinforcement during the turoring session.

All children in the study were from a school which served a lower socioeconomic Mexican-American and Black population. There were 40 tutees from grades one through three and 40 tutors from grades five and six. All tutors were recommended by their teachers.

Each tutoring session was divided in two parts. In the first part the tutor introduced new words by writing, spelling, and saying each. The second part was for oral reading.

Two tutorial models were employed. Both models used instructional methods similar to those a classroom teacher with the opportunity for individual instruction would use. Experimental Group II differed from Group I in the first part of the tutoring sessions. The emphasis in Group II was on the systematic use of verbal positive reinforcement. No attention was given to errors while tutees read. Verbal

positive reinforcements were recorded. At the end of each week they were redeemable for merit badges. In Group I there was no systematic effort by the tutors to administer positive reinforcement.

The tutors were instructed in the use of their appropriate tutoring techniques in four training sessions. In addition, three teacher-supervisors assigned to each tutoring group observed each tutor at least once a week during an actual tutoring session. Friday mornings were reserved for a group meeting with the tutors, at which time the supervisors attempted to correct mistakes they had observed. Tutoring was done 20 minutes a day 4 days a week for 8 weeks.

The results demonstrate that, with proper instruction and supervision, fifth and sixth graders can facilitate measurable yet limited reading development in younger children. Both groups obtained significantly greater gain scores than the control group (which received no tutoring) on the criterion-referenced Word Recognition Tests. Peer tutoring was effective in advancing reading growth but it limited to fairly specific goals.

There was no evidence to support the hypothesis that the group receiving positive reinforcement would outperform the other experimental group.

Strodtbeck, F. and Granick, L. **B,C**

An evaluation of the youth tutoring youth model for in school neighborhood youth corps.

The National Commission on Resources for Youth, Inc., December 1972.

This evaluative study was conducted with two purposes. The first was to design and identify appropriate procedures and instruments for evaluating Youth Tutoring Youth (YTY) projects. That is, one purpose of this work was to serve as a model for future evaluations. The second purpose was to assess the effects of YTY on the tutors and tutees. The research group developed a plethora of instruments for the evaluation of YTY rather than using existing tests which are often designed to highlight individual differences among learners, rather than to measure specific learning and effective characteristics such as interest in school and motivation.

The many goals of the YTY program included increasing language skills and improving attitudes toward school, self, and work of the tutors. The goals for the tutees included improving language skills, increasing self image, self confidence, and interest in school, and strengthening role identification.

There were 277 tutors in Chicago and in Washington, D.C., and 207 control students (nontutors). Most of the tutors were high school students who had been identified as high probability dropouts. Their ages ranged from 14 to 17, they were predominantly Black and disadvantaged. There were 219 tutees and 185 control subjects. Their ages ranged from 6 to 13. The tutees and controls in Washington, D.C. tended to be younger than the Chicago group.

The actual tutoring programs differed from city to city and from site to site in training procedures of tutors, time spent in tutoring, and in emphasis on goals (for example, either "personal-social" or academic).

The overall results of the evaluation can be briefly summarized as follows:

A. *Effects on Tutors*
   1. Tutors were better able to improve their language skills than controls.
   2. Tutors attended school more regularly than controls.
   3. Tutors increased in self-esteem.
   4. There was little difference in tutors' efficacy.

B. *Effects on Tutees*

1. Tutees made gains in reading interest and picture vocabulary, but not in reading achievement.
2. Tutees who had been performing below grade level in conceptual skills showed gains, but the whole tutee group did not.
3. There was evidence to indicate increased self confidence.
4. There were changes in tutees' perceptions of their classroom behavior.
5. There seemed to be no specific factor related to a program's success. There is a suggestion that males do better in academic programs and females in social-personal programs.

Tannenbaum, A.J. **C,B,D**

An evaluation of STAR, or the effects of training and deputizing indigenous adults to administer a home based tutoring program to first graders in an urban depressed area.

Mobilization for Youth Inc., New York, August 1967.

This project, Supplementary Teaching Assistance in Reading (STAR), was evaluated in order to assess the effectiveness of using indigenous nonprofessional tutors in a home based program.

Reading readiness programs were presented to 490 urban first graders (preliminary investigations by this author had found no effect of tutoring on older students) of lower class Puerto Rican background. Both monolingual and bilingual nonprofessionals either tutored a child with the parent observing, or taught the parent how to tutor the child. The lessons in reading readiness included code breaking, formal language, and visual perceptual exercises.

After 6 months, nine tests were administered to 19 STAR pupils, to 12 STAR dropouts, to 90 pupils from a clinic for direct remediation, and to 23 control pupils. Although preprogram test scores of STAR pupils were not available, it was generally found that the STAR children had higher mean scores on all nine tests than the other groups. Compared to national norms, the STAR pupils had average scores. There were no differences on the nine tests between STAR pupils tutored by the nonprofessional tutors and those tutored by their parents.

Thelen, H. **A,B,E**

Tutoring by students.

School Review, 1969, 77, 229-244.

This article is not the report of an empirical study or a review of the literature, but an examination of the varieties of tutoring programs, and speculations about the beneficial relationship between tutor and tutee.

The article contained a brief summary of several tutoring projects throughout the school systems of the United States. Included were descriptions of programs at Hunter College, in the Mobilization for Youth in New York City, in public schools of University City, Missouri, Salem, Oregon, and Portland, Oregon. Several other programs were described. From these programs, Thelen identifies some successful elements:

1. Meeting individual needs—tutoring may ensure greater in-school productivity.
2. Combating prejudice—in tutoring programs minorities may assist majority students, young may help old.

3. Cooperation versus competition—competition may be deemphasized in tutoring situations; the meritocracy may be humanized.
4. Creative adaptation—a response to uniform curriculums.

There are further possibilities and potentials of tutoring:

1. The establishment of teaching and learning as a common goal, shared by parents, teachers, and pupils.
2. Reduction of cross-cultural, cross-generational, and authority barriers to communication.
3. Changing the social-psychological climate of the schoolroom from competitiveness to concern for each other; reduction of anxiety which distorts children's views of each other and themselves.
4. Enhancing the ego strength and self-esteem of the tutors.
5. Helping the students find a meaningful use of subject matter, thus assimilating it better and even coming to want more of it.
6. Giving children an opportunity to take an adult role and to imagine what it would be like to be part of the productive society.
7. Training indigenous potential leaders for their community.
8. Increasing by a large factor the amount of teaching going on in the school.
9. Individualizing instruction.
10. Giving younger children a big brother or sister who can guide them during the year, as if they were adopted siblings.
11. Tutoring-advising on a standby basis.
12. Picking up cues for teaching of tutees.
13. Expanding the tutoring system to include parents, college students, etc.
14. Learning how to learn.

Thelen, H. and Others. **B,A**

Learning by teaching. A report of a conference on the helping relationship in the classroom.

Department of Education, University of Chicago, 1968.

This is a report of the Helping Relationship Conference held at the University of Chicago in 1968. It is addressed to both parents and educators and offers arguments for the value of student tutoring, examples of tutorial programs existing at the time, and specific procedures for setting up the helping relationship. Teachers and administrators should find the listings of strategies for initiating a tutorial program particularly useful. A bibliography is included.

Thelen stresses the human relation aspect of the tutoring program and the unusual opportunity presented by tutoring for developing a "caring relationship" so needed in our schools. He describes the feeling of camaraderie between the tutors as they planned a wide range of activities which range from demonstrating science experiments to performing puppet plays, and as they discussed and ironed out problems.

Thomas, J. L. **B,C,A**

Tutoring strategies and effectiveness: A comparison of elementary age tutors and college age tutors.

Unpublished doctoral dissertation, University of Texas, Austin, 1970.

This study is an investigation of whether elementary tutors can function as effectively as college age tutors to achieve reading gains with second grade tutees. The

study was also concerned with whether significant differences in tutoring techniques would be found between the elementary and college tutors.

Data were gather through an analysis of videotapes made of the tutorial sessions and through analysis of pretest, post-test, and delayed test scores for tutees.

Findings indicate that:

1. Elementary and college tutors were equally effective as tutors with materials below fourth grade level.
2. The two groups of tutors were equally effective in teaching comprehension and oral reading skills.
3. Differences were found between the tutoring techniques used by the two tutor groups. Elementary tutors were more direct and employed more visual and kinesthetic modalities. College tutors were more task-oriented and tended to push the tutees through materials of an inappropriate level.

Weitzman, D. **B**

Effect of tutoring on performance and motivation ratings in secondary school students.

California Journal of Educational Research, 1965, 16, 108-115.

This study was designed to determine the effectiveness of a nonstructured tutorial program for high school students. All subjects were volunteers. The tutors were 30 eleventh and twelfth grade students. Each tutor worked with from 3 to 5 high school student tutees. The tutors and their supervising teachers were encouraged to develop their own tutorial techniques.

The study reports:

1. No significant improvement in classroom examination scores was found for the tutees.
2. Homework and written assignments showed greater improvement among tutees than among students who had not received tutorial assistance.
3. Motivation and interest was higher among tutees than among students who had not received tutorial assistance.
4. The study habits of tutees showed improvement greater than improvement shown by nontutored students.

Werth, T. G. **B,C**

An assessment of the reciprocal effect of high school senior low achievers tutoring freshman low achievers in English classes.

Unpublished doctoral dissertation, Oregon State University, Corvallis, 1968.

The investigator compared a tutoring program to a traditional program for improving reading comprehension, language usage skills, spelling, and interest in English.

The 128 subjects were all low achieving first semester high school students. Thirty-two seniors tutored 32 freshmen. An equal number of seniors and freshmen served as control groups.

The following results were found:

1. Tutored freshmen improved in reading comprehension and interest in English more than the control (untutored) freshmen.
2. Senior tutors showed greater interest in English than control seniors.
3. There were no differences in the improvement of reading comprehension, language usage, and spelling between the senior tutors and the senior controls.

4. There were no differences between the tutored freshmen in language usage and spelling and the freshman controls.

It was concluded that the reciprocal benefits of tutoring are more difficult to produce in high school seniors than in younger students.

Zack, L., Horner, V. and Kaufman, J. **A,C**

Tutoring in a slum school.

Elementary School Journal, 1969, 70, 20-27.

This study in tutoring tested two hypotheses concerning motivation and learning of arthmetic skills by disadvantaged fourth grade students:

1. Greater learning will occur when systematic reinforcement is used with tutees.
2. Greater learning will occur among students who are individually tutored than will occur among nontutored students, regardless of the type of reinforcement used with tutees.

Tutors were educational psychology graduate students from Yeshiva University. Sixty fourth grade students from an inner-city Brooklyn public school were assigned to two experimental groups of 15 students each and a control group of 30 subjects. Subjects in both experimental groups received individual tutoring, but different forms of reinforcement. Experimental Group I received systematic reinforcement in the form of tokens which could be exchange for candy. Experimental Group II received nonsystematic reinforcement in the form of verbal rewards.

Tutoring sessions were conducted for 30-minute periods, 2 days each week for 6 months. Tutors kept anecdotal records of the tutorial sessions. The Stanford Achievement test in arithmetic was administered as both pretest and post-test.

Reported findings of the study were:

1. Both tutee groups made statistically significant gains in arithmetic concepts above the gains made by the control group. Gains were also made in arithmetic computation, but these gains were not significantly different from gains made by the control group.
2. No statistically significant difference was found between the achievement of tutees who received material reinforcement and tutees who received verbal reinforcement. The two reinforcement techniques used in this study were equally effective with inner-city children.